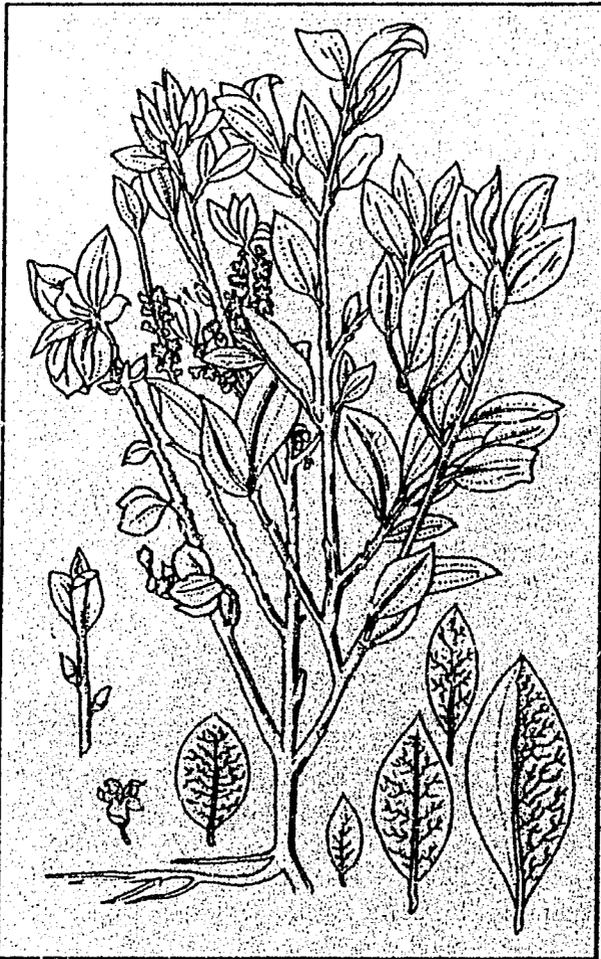


CULTURAL SURVIVAL REPORT 23

COCA AND COCAINE

Effects on People and Policy in Latin America



Deborah Pacini and Christine Franquemont
Editors

Cultural Survival is a non-profit organization founded in 1972. It is concerned with the fate of ethnic minorities and indigenous people throughout the world. Some of these groups face physical extinction, for they are seen as impediments to "development" or "progress". For others the destruction is more subtle. If they are not annihilated or swallowed up by the governing group, they are often decimated by newly introduced diseases and denied their self-determination. They normally are deprived of their lands and their means of livelihood and forced to adapt to a dominant society, whose language they may not speak, without possessing the educational, technical, or other skills necessary to make such an adaptation. They therefore are likely to experience permanent poverty, political marginality and cultural alienation.

Cultural Survival is thus concerned with human rights issues related to economic development. The organization searches for alternative solutions and works to put those solutions into effect. This involves documenting the destructive aspects of certain types of development and describing alternative, culturally sensitive development projects. Publications, such as *Cultural Survival Quarterly*, and the Special Reports, as well as this Cultural Survival Report series, formerly known as Occasional Paper series, are designed to satisfy this need. All papers are intended for a general public as well as for specialized readers, in the hope that the reports will provide basic information as well as research documents for professional work.

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From 1979 to 1982, Cultural Survival published Special Reports. These broad reports ranged from studies of the situation of ethnic minorities and indigenous peoples in a single area to analyses of general problems facing such groups.

The Cultural Survival Report series, first published as the Occasional Paper series from 1980 until 1985, fills the need for specialized monographs that exceed acceptable length for the *Quarterly*. Each paper concentrates on an urgent situation precipitated by policies or activities adversely affecting indigenous peoples. Planned to influence policy as well as to inform readers, Cultural Survival Reports accepted for publication are printed immediately and sold at cost.

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Proceedings of the Conference
The Coca Leaf and Its Derivatives—Biology, Society and Policy
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FOREWORD

In early 1985 Deborah Pacini and Christine Franquemont, both PhD candidates in anthropology at Cornell University, proposed that the Cornell Latin American Studies Program sponsor a conference on coca. Their idea was to move beyond the geographical and cultural borders of the United States, and to bring together a range of specialists in a variety of disciplines to address issues seldom treated in the popular media but which are essential to an understanding of the coca plant, its uses and the policies surrounding its production and marketing.

Over the next few months Pacini and Franquemont, joined by others at times, worked intensely to organize such a conference. On April 25 and 26, 1985, the conference took place at Cornell. The essays in this volume were collected from the meeting, and appropriately edited by Pacini and Franquemont, without whose efforts neither conference nor book would have come to fruition.

I take this opportunity to thank several people and institutions for their help at various stages of the conference. These include Mary Jo Dudley, Coordinator of the Committee on US-Latin American Relations; Lourdes Brache, Administrative Aide in the Latin American Studies Program; David Block, Latin American Librarian; and Geoffrey Spurling. Cornell professors who assisted include Billie Jean Isbell, Milton Barnett and David Thurston. Cornell entities who co-sponsored the conference, providing funds and facilities, include the Rural Development Committee, Bailey Hortorium, International Agriculture Program, Committee on US-Latin American Relations, Program on Science, Technology and Society; American Indian Program; Anthropology Graduate Students Association; International Studies in Planning; Division of Nutritional Sciences; Office of Campus Affairs; and the Departments of Rural Sociology, Anthropology and History.

I also thank Cultural Survival, Inc., particularly Jason Clay, director of research, and Ruth Taswell, associate editor, for their help and collaboration in the publication of this volume.

Thomas H. Holloway, Director
Latin American Studies Program
Cornell University

INTRODUCTION

Deborah Pacini and Christine Franquemont

Cocaine has become the illegal drug of preference in the United States in the 1980s. The "cocaine problem" has recently attracted considerable media attention and has now become part of our national consciousness. Although stories such as those in *Time* magazine's "Cocaine Wars" issue note that cocaine is manufactured from the coca plant, which is cultivated throughout Latin America, the focus of media coverage has been on the impact of coca's principal chemical derivative, cocaine, on the United States. The high stakes, high risk "game" of the cocaine trade provides material for popular television police shows, evoking images of cunning and ruthless Latin drug dealers but seldom hinting at the points of origin — historical, geographical and cultural — for this headline phenomenon. Largely ignored is that the recent intensification of demand and production of coca and cocaine — and the US government's drug control policies — causes far-reaching changes in the social, political and economic structures of much of Latin America.

From its origin in lowland South America *cocales* (coca fields) to its final destination, primarily North American and European urban centers, the coca and cocaine enterprise forms a long chain involving a wide diversity of links: persons, occupations, equipment, transactions, resources — and consequences. In an effort to examine and understand the problems and issues the Latin American supply side of the chain experiences, a conference was held at Cornell University April 25-26, 1985, entitled "The Coca Leaf and Its Derivatives: Biology, Society and Policy." These proceedings represent a joint effort by the Cornell Latin American Studies Program, principal sponsor of the conference, and Cultural Survival, whose similar interests and concerns led it to collaborate on the publication of these proceedings, to make the information presented at the conference available to a wider audience.

Cornell University has a long tradition of Andean studies. The idea behind the conference was to build upon that tradition and provide a careful analysis of the coca and cocaine issues from an Andean viewpoint, broadly defined to include Colombia and the lowlands adjacent to the Andes, as well as the Andean region proper. It was the intent of the conference, as it is for these proceedings, to look behind the headlines on coca and cocaine, present the current state of knowledge about the coca leaf and its chemical derivatives, and examine what is going on in the coca-producing regions of Latin America. While the focus of these discussions was basically limited to coca's and cocaine's Latin American context, it was,

nevertheless, implicit that the demand from the United States shapes the current coca- and cocaine-related transformations in Latin American society. Therefore, our interests in the subject are not just as Latin Americanist observers, but also as United States citizens concerned about how our country's consumption patterns and official policies are affecting our southern neighbors.

One of the fundamental assumptions behind the organization of the conference and these proceedings is that coca and cocaine need to be approached as part of a *system*, not as isolated commodities. The intention is thus to join together the work of specialists on coca from a number of disparate fields. The papers in this volume address a wide range of coca-related issues – coca's botanical attributes, cultivation, processing, marketing and consumption – from the differing perspectives of botanists, ethnohistorians, anthropologists, development sociologists, political scientists, medical doctors, law enforcement officials and those concerned with the impact of the modern world on native peoples. In short, these proceedings trace the cocaine issue from its roots to its ramifications: the coca leaf is considered as a plant, as a commodity, as a source of power and as a symbol.

Botanist Plowman provides basic information about the coca leaf which is necessary for a proper understanding of the complexities of the coca issues. He describes the physiological characteristics of the coca plant, the effects of coca chewing and the various ways that coca has been used traditionally by the indigenous inhabitants of South America. Plowman also describes the antiquity, evolution and geographical distribution of the various varieties of coca plant which have been developed over millennia for cultivation in different ecological zones. Allen, an anthropologist, discusses the cultural significance of coca for a community of highland Peruvian Indians. She observes that coca chewing is a symbol of cultural identity and suggests that the probable consequences of the suppression of traditional coca chewing by coca eradication and control policies could be severe.

While coca production and consumption have existed for millennia in parts of Latin America, many of the specific patterns of its production and consumption have changed considerably throughout the centuries since the European invasion. Contributions by Andean historians Murra and Klein provide a chronological dimension. Their pieces offer glimpses of historical consumption both from pre-invasion times through the colonial and republican periods, and up to its recent explosive growth into the international market. Murra challenges the common misconception that coca cultivation and chewing were an exclusive monopoly and prerogative of the Inca elite. He also points out how rapidly the traditional cultivation and distribution patterns of coca leaf were transformed by mining at Potosí. Klein discusses the structural changes in coca production in the Bolivian Yungas region in the four centuries after the Spanish entrance into that area,

and how the commercial production of coca leaf was dominated not by the Indian communities but by entrepreneurial Spaniards.

Cusack, long involved in international drug enforcement, now chief of staff of the US House of Representatives Select Committee on Narcotics Control and Abuse, presents the position of the United States government on coca control. He outlines the history of international narcotics control treaties, initially designed principally to control opium and its derivatives, heroin and morphine, but which eventually came to include coca leaf. The most recent treaty (which expires in 1989) is the 1961 United Nations Single Convention on Narcotic Drugs which, as he points out, calls not only for the control of coca cultivation, but for the total abolition of coca leaf chewing by 1989. Cusack also presents the argument that demand and consumption can be reduced by limiting supply, the principal rationale behind the policies designed to reduce coca leaf cultivation.

The assumption behind the UN treaty and US policy are challenged by other papers in this volume. Strug, an anthropologist, evaluates a coca eradication plan that was proposed by the US government for the Tingo María-Aucayacu region of Peru. He presents reasons why such eradication plans are unlikely to succeed and states, furthermore, that they threaten the well-being of thousands of Peruvian peasants, most of whom are Indian. Bagley, a political scientist, discusses the nature of the coca and cocaine system in Colombia. While he believes the cocaine business will continue, he points out that it has had a profound impact on the social, economic and political structures of that country. Healy, trained in development sociology, analyzes the coca and cocaine system in Bolivian, where coca production takes place in a national context of severe economic depression and internal struggles for political power. Particularly interesting is his examination of the coca and cocaine enterprise in terms of dependence theory. Macdonald, projects director for Cultural Survival, analyzes the implications of the coca and cocaine system on the Amazonian Indians of Ecuador. Some Indian groups have recently become involved in coca cultivation, attracted by the large profits to be made. Macdonald points out, however, the often subtle but insidious ways that the introduction of relatively large sums of cash and consumer goods threaten the cultural, economic and political survival of Ecuador's Amazonian Indians.

These proceedings seek to overcome the tendency of the media – and the US government as well – to ignore the significant differences between the various coca-producing countries by providing a geographical as well as a thematic and chronological overview of the coca and cocaine system. Most people know that the principal countries involved in coca and cocaine production are Bolivia, Peru and Colombia, yet it is less well understood that the differences between these nations' historical experiences and current roles in the international drug market are significant.

Indigenous groups comprise a far larger percentage of the total national population in Peru and Bolivia than in Colombia. Consequently, the sociocultural impact on indigenous populations caused by the expanding

commercialization of coca and coca-control policies will be proportionately greater in the former two countries than in Colombia. Since those participating in the many aspects of the cocaine business in Colombia tend *not* to be indigenous people, the sociocultural impact of the coca and cocaine system and the policies designed to control it in that country will be very different than in Peru and Bolivia. Yet, while Colombia has a much smaller percentage of traditional native users of coca than Peru and Bolivia, those indigenous populations that do still grow and consume coca are being affected in ways very similar to those experienced by indigenous populations of the high Andes.

Ecuador, on the other hand, presents a very different situation: in contrast to Peru, Bolivia and Colombia, where efforts to prohibit the traditional use of coca have been largely unsuccessful, traditional coca growing and chewing in Ecuador were eradicated in the nineteenth century. Ecuador's recent reemergence as a coca producer, then, is occurring within an entirely different context than the one that existed when coca chewing was abandoned years ago. The situation of the other newcomers to the coca and cocaine system, Venezuela and Brazil, also differs fundamentally from that of Peru and Bolivia, where the modern, export-oriented production of coca is superimposed upon a traditional production and consumption pattern.

Thus, each of these Latin American countries will respond in its own way to the opportunities and consequences resulting from the rapidly increasing demand for coca and cocaine. The fundamental differences between the various countries participating in the international coca and cocaine system need to be understood by those making or evaluating policies designed to control the production of coca, since a policy that might not have a significant impact in one country can have devastating social consequences in another. Increasing this understanding is one of the principal goals of these proceedings.

COCA CHEWING AND THE BOTANICAL ORIGINS OF COCA (ERYTHROXYLUM SPP.) IN SOUTH AMERICA

Timothy Plowman

The coca leaf has played an important role in the lives of South American Indians for thousands of years. Its use as a masticatory persists today in many parts of the Andes, from northern Colombia, south to Bolivia and Argentina, and in the western part of the Amazon Basin. Coca leaf is used as a mild stimulant and as sustenance for working under harsh environmental conditions by both Indians and mestizos alike. It also serves as a universal and effective household remedy for a wide range of medical complaints. Traditionally, coca also plays a crucial symbolic and religious role in Andean society. The unifying and stabilizing effects of coca chewing on Andean culture contrasts markedly with the disruptive and convoluted phenomenon of cocaine use in Western societies. Because all cocaine entering world markets is derived from coca leaves produced in South America, the staggering increase in demand for cocaine for recreational use has had a devastating impact on South American economies, politics and, most tragically, on indigenous cultures.

The widespread intranasal use of cocaine hydrochloride or smoking of cocaine base produce quite different psychological and pharmacological experiences than the traditional chewing of coca leaves. The differences between taking concentrated cocaine and chewing coca have been pointed out repeatedly by earlier workers (Mortimer 1901; Weil 1975; Grinspoon and Bakalar 1976; Antonil 1978; inter alia). Yet many people still equate the use of coca with that of cocaine and fail to comprehend either the pharmacological or cultural differences between these two related, though unique, substances. In Western society, the public is well aware of both the pleasurable and deleterious effects of cocaine because of extensive news coverage of the cocaine "phenomenon" of recent years. Few people, however, are aware of the beneficial effects of coca chewing, of the importance of the use of coca in Andean life, or of the origin and evolution of the coca plant.

The purposes of this paper are twofold: first, to describe the process of coca chewing, the effects of coca and how it is used traditionally; and second, to discuss the botanical sources, antiquity, geographic distribution and putative evolutionary history of coca. Most of the information presented here has been published elsewhere and recently summarized (Plowman 1984a, 1984b). Readers are directed to these articles for more detailed information and references.

Coca Chewing

Coca leaves are chewed in a relatively uniform manner throughout their area of use with only minor variations. Coca is always dried before use; this facilitates the rapid release of the chemical constituents from the leaves during chewing. The dried leaves are placed in the mouth one or a few at a time and slowly moistened with saliva. This act is frequently accompanied by traditional rituals and etiquette (Allen 1981). Almost immediately, a rich, green juice issues from the leaves, and they become soft and pliable. The leaves are then moved about in the mouth with the tongue, rolled into a ball or quid and pushed into one cheek. Coca is never really chewed, but rather the moistened quid of leaves is sucked upon to extract the juices, which slowly trickle into the stomach. In South America, a number of words are used specifically to denote coca chewing: *mambear* (Colombia); *chacchar*, *acullicar*, *pijchear* (Peru, Bolivia); *coquear* and *mascar* (general).

The juice that emanates from the quid is distinctive in flavor, which depends upon the variety of coca. Generally, coca has a grassy or hay-like taste, with a hint of wintergreen in Trujillo and Colombian coca. During the earliest stages of chewing, all coca varieties are distinctly bitter because of the presence of alkaloids, primarily cocaine. This bitterness is counteracted by the addition of an alkali substance, such as powdered lime or ashes – or even sodium bicarbonate among nonnative chewers. The powdered lime is traditionally carried in a small bottle gourd and added to the quid with a slender dipper or stick. The alkali not only “sweetens” the chew but also noticeably potentiates its effects, both in numbing the cheeks and tongue (through the anesthetic effect of cocaine) and by increasing the stimulating effect. Additional doses of alkali periodically are added to the quid to maintain its effect on the chew; more leaves may be added until the quid reaches an optimal size for the chewer.

The amount of time the coca quid is kept in the mouth varies, depending on the individual user, from about 30 to 90 minutes, after which the quid is spat out. The amount of coca chewed also varies according to individual taste and availability, ranging generally from 25 to 75 grams of leaves per day with an average of about 50 grams (Plowman 1984a).

All varieties of cultivated coca contain the alkaloid cocaine, by weight generally less than one percent of the dry leaf; Amazonian coca contains less than 0.5 percent. In addition, all varieties contain the secondary alkaloid cinnamoylcocaine (Plowman and River 1983). Although this alkaloid may be present in substantial amounts, it is not known to have any pharmacological effects (Novak et al. 1984). In addition to alkaloids, coca leaves may contain significant amounts of wintergreen oil, methyl salicylate, which gives a distinctive flavor to the leaves. Recent studies have also isolated several flavonoid compounds (Bohm et al. 1982). These are useful in chemotaxonomy but have no known pharmacological effects.

An important group of constituents in coca – nutrients – has been largely overlooked or ignored. During the 1970s, a number of studies demonstrated that coca leaves contain impressive amounts of vitamins and



Contemporary coca chewer inserting powdered lime into coca quid Balsas, Rio Marañon, Amazonas, Peru
Timothy Plowman

minerals (Machado 1972; Duke et al. 1975; Carter et al. 1980). In one study (Duke et al. 1975) the amounts of 15 nutrients in Bolivian coca leaves were compared to averages of these nutrients present in 50 Latin American foods. Coca was found to be higher in calories, protein, carbohydrates, fibers, calcium, phosphorus, iron, vitamin A and riboflavin. Based on these data, 100 grams of Bolivian coca would more than satisfy the Recommended Dietary Allowance for reference man and woman in calcium, iron, phosphorus, vitamin A and riboflavin. These data contradict earlier claims that coca chewing results in malnutrition (cf. Saenz 1941; Gutierrez-Noriega and Zapata Ortiz 1948; Zapata Ortiz 1970).

The primary effect of chewing coca is a mild stimulation of the central nervous system resulting from the assimilation of cocaine from the leaves (Holmstedt et al. 1979). This stimulation gives a sense of increased energy and strength, a suppression of the sensation of fatigue, an elevation of mood or mild euphoria and a sense of well-being and contentment. Coca also produces a temporary suppression of appetite, but it is never used in

place of food (Burchard 1975). Owing to the local anesthetic properties of cocaine, coca chewers experience a pronounced numbing sensation on the cheeks and tongue. Some workers (Montesinos 1965; Burchard 1975) have suggested that the ecgonine (an alkaloid) derivatives of cocaine may play a role in the combined effects of coca chewing, but their theories have yet to be confirmed with controlled experiments.

There is no evidence that coca chewing results in tolerance or physiological dependence, or any acute or chronic deleterious effects (Weil 1975; Grinspoon and Bakalar 1976; Carter et al. 1980). Ironically, although there has been a massive research effort on the effects of cocaine, no modern pharmacological studies of coca chewing in native coca chewers have been conducted to date. Even though cocaine is the principal and most powerful constituent of coca leaves, the complex effects of chewing the leaves cannot be equated with the comparatively straightforward effects of cocaine.

Whether in the high Andean *Altiplano* (high plateau region) or in the Amazonian lowlands, the principal use of coca is for work (Burchard 1975; Carter et al. 1980; Plowman 1981, 1984a). Workers will take several breaks during the daily work schedule to rest and chew coca, not unlike the coffee break of Western society. Coca chewers maintain that coca gives them more vigor and strength and assuages feelings of hunger, thirst, cold and fatigue. Coca is chewed by rural people in all kinds of professions that require physical work, especially by farmers, herders and miners in the highlands and by farmers, fishermen and hunters in the lowlands. Coca is especially highly regarded for making long journeys on foot whether in the high Andes or Amazonian forests (Mortimer 1901; Martin 1970; Plowman 1981).

The second most important use of coca is as a medicine, and this use is inextricable from the Indians' belief that coca is a protector and preserver of health. It is significant that many South Americans, Indians and non-Indians, who do not regularly chew coca as a stimulant will cultivate the plant and use the leaves medicinally. As an internal medicine, coca is both taken as an infusion and chewed as a quid. Probably the most important medicinal use of coca is for disorders of the gastrointestinal tract. It is the remedy of choice for dysentery, stomachaches, indigestion, cramps, diarrhea, stomach ulcers and other painful conditions (Martin 1970; Fabrega and Manning 1972; Hulshof 1978; Carter et al. 1980, 1981; Weil 1981; Grinspoon and Bakalar 1981). Coca is also the most important remedy for treating symptoms of altitude sickness or *soroche*, which include nausea, dizziness, cramps and severe headaches. Coca is also commonly used for toothaches, rheumatism, hangovers and numerous other ailments, taken either internally or applied as a plaster or poultice.

Since the turn of the century, the importance of coca leaf as a medicine has been largely ignored by Western scientists, who identified coca leaf with cocaine and preferred to experiment with the pure, isolated compound. As a result, coca leaves completely disappeared as a pharmaceutical product and no longer were available for investigation in the United States and Europe.

Recently, coca is being restudied for possible applications in modern medicine. Weil (1981) has recommended that coca be studied for several therapeutic applications, including: (1) for painful and spasmodic conditions of the entire gastrointestinal tract; (2) as a substitute stimulant for coffee in persons who suffer gastrointestinal problems from its use or who are overly dependent on caffeine; (3) as a fast-acting antidepressant and mood elevator without toxic side effects; (4) as a treatment for acute motion sickness; (5) as an adjunctive therapy in programs of weight reduction and physical fitness; (6) as a symptomatic treatment of toothache and sores in the mouth; (7) as a substitute stimulant to wean addicted users of amphetamines and cocaine which are more dangerous and have higher abuse potential; and (8) as a tonic and normalizer of body functions.

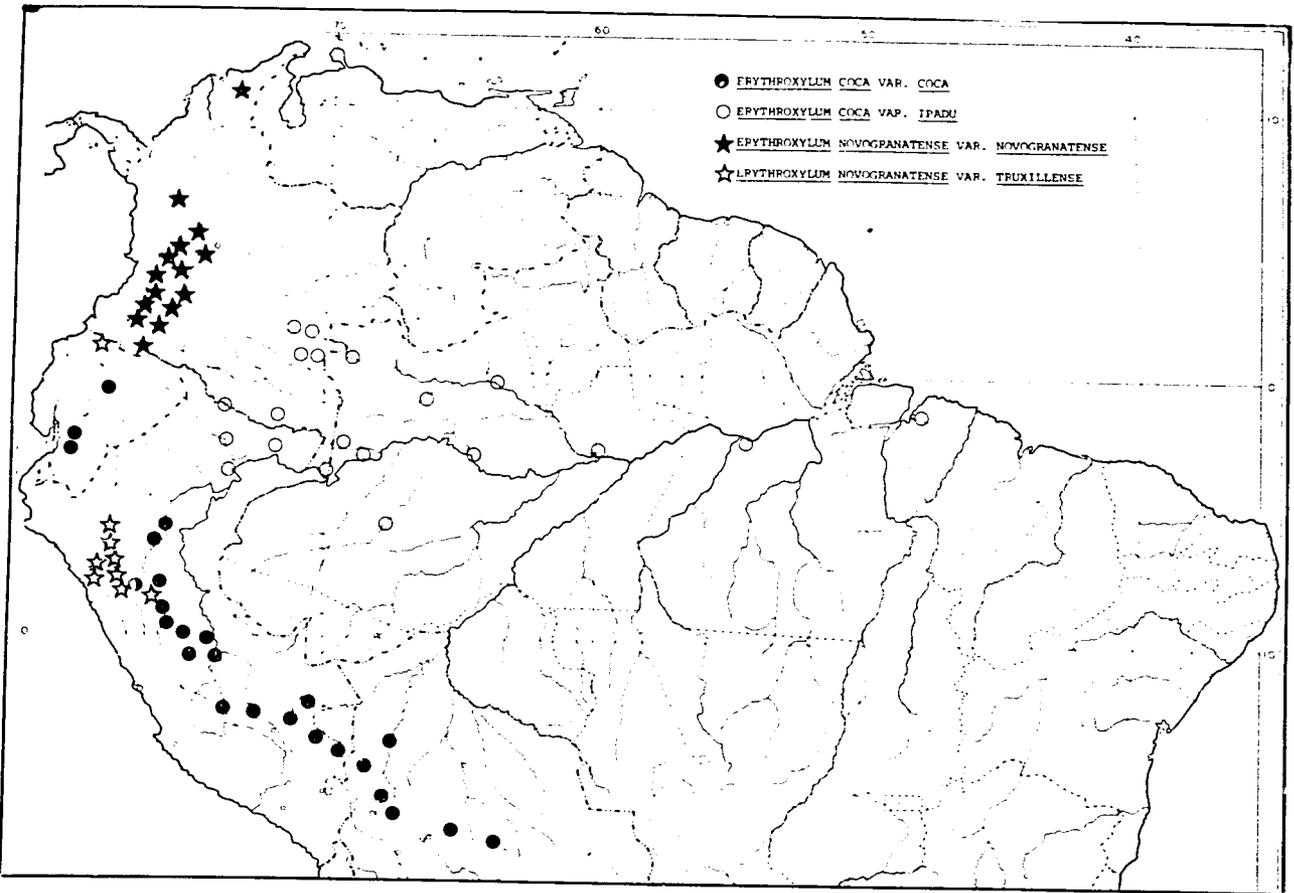
The Botany of Coca

The origin and nature of the coca plant have long been subjects of controversy and uncertainty in botanical, medical, pharmaceutical and anthropological circles (Plowman 1979a, 1982, 1984a, 1984b). Until recently, many scholars underestimated or completely overlooked the importance of the existence of distinct varieties of coca. Although geographical, ecological and morphological differences in coca varieties were recorded as early as the sixteenth century, their significance was not recognized until the 1970s (Rostworowski 1973; Antonil 1978; Plowman 1979a). Not until coca leaf became an important pharmaceutical product in the late nineteenth century did the botanical origins and varieties of coca become the subject of scientific inquiry (Plowman 1982).

Most anthropologists and archeologists in the past embraced a monotypic view of coca, largely because of their unfamiliarity with botanical works. As a result, their interpretations of the early history of coca in South American cultures were often simplistic, misguided or erroneous. It is only through recent collaborative efforts that a thorough, multidisciplinary understanding of coca is now possible.

The coca shrub belongs to the genus *Erythroxylum* in the tropical family Erythroxylaceae. *Erythroxylum* includes about 250 species, most of which occur in the New World tropics. Many species are employed in folk medicine (Hegnauer 1981), but it is only in tropical America where *Erythroxylum* leaves are chewed extensively as a stimulant and where the plants attain major cultural importance (Mayer 1978; Antonil 1978; Plowman 1984a, 1984b).

All cultivated coca is derived from two closely related South American species: *Erythroxylum coca* Lam. and *E. novogranatense* (Morris) Hieron. Whereas certain wild neotropical species of *Erythroxylum* may be employed locally as medicines, all discussions of "coca" should be confined to these two cultivated species. Until the mid-1970s, only one species of "coca" — *Erythroxylum coca* — was generally recognized (Mortimer 1901; Hegnauer and Fikenscher 1960; Martin 1970). However, evidence resulting from intense field and laboratory studies has accumulated during the past



Present Distribution of the Four Varieties of Cultivated Coca (*Erythroxylum* spp.)
 Based on Herbarium Collections

decade and demonstrates incontrovertibly that two distinct species of coca should be recognized (Plowman 1979a; Rury 1981, 1982; Bohm et al. 1982; Plowman and Rivier 1983; Plowman 1984a).

Each of the two species of cultivated coca has one distinct variety, designated *E. coca* var. *ipadu* Plowman and *E. novogranatense* var. *truxillense* (Rusby) Plowman, respectively. The four cultivated cocas of South America are thus treated as follows: *Erythroxylum coca* var. *coca*, *E. coca* var. *ipadu*, *E. novogranatense* var. *novogranatense* and *E. novogranatense* var. *truxillense*.

All four cultivated cocas were domesticated in pre-Columbian times and are still employed by native coca chewers in South America. Each of them was known by a different native name before the Spanish popularized the now widespread term "coca." All the cultivated cocas contain the alkaloid cocaine, although they are now known to differ appreciably in the content of minor alkaloids and other chemical constituents (Bohm et al. 1982; Plowman and Rivier 1983). Additional important differences among the four varieties are found in their stem and leaf anatomy, ecology, geographical distribution, and breeding relationships, as well as in the methods of their cultivation and preparation for chewing. These differences reflect intensive human selection over thousands of years for specific traits and for successful cultivation in a wide variety of habitats.

The four varieties of cultivated coca are more closely related to each other than to any other species of *Erythroxylum*, although certain wild species clearly belong to the same species group and some also contain cocaine (Plowman and Rivier 1983). Superficially the cultivated cocas are very similar morphologically, which in part explains earlier confusion in the identification of coca, especially by nonspecialists (Plowman 1979a, 1982). The varieties usually can be distinguished using combinations of characters including the branching habit, bark, leaves, stipules, flowers and fruits. In most cases, isolated coca leaves can now be identified to species if not to variety, especially if the provenance of the samples is known.

Recent studies have provided additional new characteristics that permit the accurate identification of coca leaves, including archeological specimens. These studies focus on leaf anatomy (Rury 1981, 1982; Rury and Plowman 1983; Plowman and Rivier 1983), reproductive biology and breeding relationships (Ganders 1979; Bohm et al. 1982), and ecology and geographical distribution (Plowman 1979a, 1979b, 1981, 1984a, 1984b). As a result of these investigations, the taxonomic and evolutionary relationships among the four cultivated cocas are now fairly well understood.

Erythroxylum Coca var. *Coca*, Huánuco or Bolivian Coca

The species *Erythroxylum coca* includes the wide-ranging and economically important Andean variety *E. coca* var. *coca* and a geographically restricted Amazonian variety *E. coca* var. *ipadu*. Var. *coca* is often referred to as "Bolivian" or "Huánuco" coca, but neither of these



Huánuco coca (*Erythroxylum coca* var. *coca*) plantation at Naranjilla near Tingo Maria, Huánuco, Peru.

Timothy Plowman

common names conveys the extensive geographic range of the variety. For convenience, I will refer to this variety as "Huánuco coca."

Huánuco coca is a shrub one to three m tall and grows mainly between 500 and 1,500 m elevation but may reach 2,000 m in some areas. It is cultivated in regions of moist tropical forest along the eastern slopes of the Andes and in the wetter inter-Andean valleys, in the ecological zone known generally as *montaña*. Because it has a fairly limited ecological range, Huánuco coca is little known outside its original area in South America. It is this variety that is the principal commercial source of coca leaves and of most of the world's cocaine supply.

The leaves of Huánuco coca vary appreciably in their cocaine content. Chemical analyses of dried leaves from many localities in Peru and Bolivia varied from 0.23 percent to 0.93 percent cocaine, with an average of 0.63 percent. The most potent leaf came from Chinchao in Huánuco, a locality near the upper limits of coca cultivation; this supports a long-held view that coca from higher elevations contains higher concentrations of cocaine (Plowman and Rivier 1983).

Geographically, Huánuco coca extends from Ecuador south to Bolivia. Only in Ecuador, where suitable moist forest habitats occur on both sides of the Andes, does this variety reach the Pacific slope. It is unknown in Colombia or in the Amazonian lowlands.

Throughout its range, Huánuco coca is found as wild-growing or feral individuals in the understory of primary or secondary forests, both nearby

and far from areas of present coca cultivation. It is well adapted to the montaña habitat, where it appears to be a natural component of the forest understory, occurring sympatrically with several wild species of *Erythroxylum*.

It is usually impossible to distinguish between truly wild-growing individuals of Huánuco coca and plants that have been dispersed from nearby plantations or that persist after plantations are abandoned. There are apparently no barriers to gene flow between wild and cultivated populations, which freely interbreed when growing in proximity. The small, red fruits are eagerly eaten by birds, which disseminate the seeds throughout the montaña zone. There are no essential structural differences between wild-growing and cultivated plants of *E. coca* var. *coca*, and this variety remains largely unaltered morphologically, genetically or physiologically through domestication. Throughout the range of Huánuco coca one finds local variants, the result of local selection in a particular isolated valley or microclimate. Although these variants often bear vernacular names, and several may be recognized in a particular place, they are minor forms that carry no taxonomic significance. However, these forms or cultivars represent the long history of cultivation and local selection of Huánuco coca throughout the eastern Andes. Unfortunately, no detailed studies exist that document these local variants.

Erythroxylum coca var. *coca* is now thought to be a naturally occurring, wild species of the montaña, from which the other three cocas ultimately were derived as cultigens through human selection. Originally *E. coca* var. *coca* had a more limited distribution as a wild species, possibly in eastern Peru in the area centering on the Huallaga Valley, where wild-growing Huánuco coca is frequently encountered today. Subsequent range extensions northward to Ecuador and southward to Bolivia probably occurred through man's cultivation.

Huánuco coca is cultivated in small to large plantations on steep mountain slopes and in valley bottoms along the eastern flanks of the Andes. This is an area of generally high rainfall and fertile soils, covered naturally by moist, tropical forest. On steep slopes the shrubs are planted in neat rows on carefully-prepared terraces. Coca terraces are especially evident in the ancient coca-growing districts of Cuzco, Peru and in the Bolivian Yungas. In newer areas of expanding coca production, such as the Huallaga Valley in Peru and the Chapare in Bolivia, terracing is less important and the shrubs are merely planted in rows on newly cleared hillsides (Plowman 1984a).

Huánuco coca is always grown from seeds, which are germinated in special nurseries or planted directly into the field under shade of manioc (Plowman 1984a). Once established, a plantation of Huánuco coca will yield its first harvest in one to two years and reach maximum productivity in about five years. Well-maintained plantations may remain productive for up to 40 years, although productivity decreases after 10-15 years. Huánuco coca is harvested three to four times per year; each shrub is stripped of all or



Terraced fields of Huánuco coca (*Erythroxylum coca* var. *coca*) on steep hillside in the Bolivian Yungas, along road from Coroico to Ayapata.

© Timothy P'lowman



A man harvests Huánuco coca (*Erythroxylum coca* var. *coca*) at Maramba hacienda in Cuzco, Peru. Timothy Plowman

most of its leaves during each harvest. In areas such as Tingo María, where owners of large plantations employ modern agricultural methods, up to six harvests per year are possible.

Production yields of Huánuco coca vary from region to region. In Peru, yields in 1971 varied from 410 kg hectare (Madre de Dios) to 1,200 kg hectare (San Martín) with a national average of 810 kg hectare (Daneri Pérez 1974). In Bolivia, 1972 yields in the traditional coca districts of the Yungas averaged only 260 kg hectare, whereas the Chapare districts averaged 851 kg hectare (South 1977).

Erythroxylum Coca var. *ipadu*, Amazonian Coca

Although long neglected by anthropologists, Amazonian coca, *E. coca* var. *ipadu*, recently has been reexamined by botanists (Schultes 1957, 1981; Plowman 1970b, 1981; Rury 1981; Plowman and Rivier 1982; Plowman 1984a) and pharmacologists (Holmstedt et al. 1979). Amazonian coca is closely allied to *E. coca* var. *coca*, from which it has originated in relatively recent times (Plowman 1981). The Amazonian variety is cultivated on a small scale in small jungle plots by a number of tribes of the upper Amazon in parts of Colombia, Brazil and Peru. It is propagated by stem cuttings rather than by seeds, and entire plantations may represent a single clone; as such, it is well adapted to the pattern of shifting agriculture practiced by seminomadic Amazonian peoples. Amazonian coca does not survive as a feral or escaped plant in the lowland Amazon, and may be considered a true cultigen.



Bora tribesmen harvest Amazonian coca (*Erythroxylum coca* var. *ipadu*) at Brillo Nuevo, Rio Yaguasyacu, Loreto, Peru. R. E. Schultes

Amazonian coca is little differentiated genetically from *E. coca* var. *coca*, and the two varieties appear to be fully interfertile. Amazonian coca contains the same leaf flavonoid profiles as Huánuco coca (Bohm et al. 1982). The principal chemical difference in Amazonian coca is a consistently lower cocaine content; this variety contains an average of only 0.25 percent cocaine, less than half the concentrations found in other cultivated cocas (Plowman and Rivier 1983). This low cocaine content has apparently led to the elaborate preparation of Amazonian coca leaves as a finely divided powder to which is added the ashes of *Cecropia* leaves as an alkaline source. The powder is mixed in the cheek with saliva and formed into a quid similar to the quid formed in chewing whole leaves. However, the Amazonian coca quid is completely swallowed as the leaf powder gradually dissolves (Schultes 1981; Plowman 1981).

Erythroxylum coca var. *ipadu* was unknown to Europeans until the middle of the eighteenth century. Details of its cultivation, use and geographic distribution were not recorded until the present century. Amazonian coca has no archeological record with which to date its origin in Amazonia. Based on linguistic, ethnographic, historical and botanical evidence, this variety appears to be a relatively recent development. It surely evolved from stocks of *E. coca* var. *coca* introduced from the Andean foothills through selection for traits conducive to its cultivation in Amazonia (Plowman 1981). It is now geographically isolated from other coca varieties and is not further implicated in the more complex evolutionary interactions that exist among the cultivated cocas of the Andean area.

Until the mid-1970s there was no commercial production of Amazonian coca. However, Colombian cocaine traffickers then discovered coca cultivation among certain Amazonian tribes. Although this variety is much lower in cocaine content than the traditional variety in the mountains of



With his cheek full of coca powder, a Bora tribesman toasts Amazonian coca leaves (*Erythroxylon novogranatense*) at Brillo Nuevo, Rio Yambayacu, Loreto, Peru. © T. Rivieri

Colombia (*E. novogranatense* var. *novogranatense*), the traffickers found that it was easier to extract cocaine from the Amazonian variety. In addition, they found it was far easier to produce coca clandestinely in the remote *llanos* (plains) and Amazonian areas of eastern and southeastern Colombia. The effect of the Matia invasion into traditional culture in these areas, and especially on the traditional and healthful use of coca, has been devastating.

Erythroxylum Novogranatense

Although *Erythroxylum novogranatense* is now recognized as a distinct species of coca, in the past it was often confused with, or considered a variety of, *E. coca* (Plowman 1982). Appreciable evidence now exists that suggests that this species arose as a domesticated plant through human selection from *E. coca* var. *coca* (Bohm et al. 1982). *Erythroxylum novogranatense* differs from *E. coca* in a number of morphological features, but, more importantly, it has evolved distinctive chemical and ecological traits and has become genetically isolated from parental *E. coca* var. *coca*.

Erythroxylum novogranatense consists of two well-defined varieties: *E. novogranatense* var. *novogranatense*, known as "Colombian coca," and *E. novogranatense* var. *truxillense*, known as "Trujillo coca." These two varieties are more strongly differentiated from each other than is *E. coca* var. *coca* from *E. coca* var. *ipadu*. This suggests greater varietal isolation and antiquity of differentiation within *E. novogranatense* than has occurred in *E. coca*.

Both varieties of *E. novogranatense* are known today only as cultivated plants. Both varieties are well adapted to arid conditions and usually are grown in areas where *E. coca* could not survive. In both alkaloid and flavonoid chemistry, *E. novogranatense* differs fundamentally from *E. coca*. Although cocaine concentrations compare favorably with *E. coca* var. *coca*, both varieties of *E. novogranatense* produce high levels of the related alkaloid cinnamoylcocaine, which is found in only small amounts in *E. coca* (Plowman and Rivier 1983). Methyl salicylate is also a conspicuous constituent of leaves of both varieties of *E. novogranatense*, but has not been reported in *E. coca* (Plowman 1982). The leaf flavonoids of *E. novogranatense* also differ from those of *E. coca* (Bohm et al. 1982). Finally, breeding experiments between *E. coca* var. *coca* and both varieties of *E. novogranatense* have demonstrated genetic differentiation among these taxa (Bohm et al. 1982).

Erythroxylum Novogranatense Var. *Truxillense*, Trujillo Coca

Trujillo coca is cultivated today in the river valleys of the north coast of Peru between about 200 and 1,800 m elevation, and in the adjacent arid, upper Marañón Valley. One disjunct cultivated population is known in the province of Carchi in northwestern Ecuador. It is grown today on a relatively small scale for coca chewing, and in northern Peru, as a flavoring for the soft drink Coca Cola as well.

Although Trujillo coca is a highly drought-resistant shrub, it still requires some irrigation throughout its range. In pre-Conquest times, plants were cultivated on elaborate irrigated terraces on the sides of the river valleys throughout coastal Peru. Today, plantations tend to be in flat areas in the valley bottoms where the plants are watered with more primitive irrigation canals. Shrubs of Trujillo coca are spaced well apart because of the scarcity of water, and individual shrubs are allowed to grow tall and bushy. These relatively large, sturdy shrubs are able to withstand the most severe droughts and will outlast most other crop plants in the area (Plowman 1979b, 1984a).

The leaves of Trujillo coca are smaller, lighter in color and more brittle than leaves of *E. coca*. Dried leaves of Trujillo coca contain an average of 0.72 percent cocaine (Plowman and Rivier 1982). Because it contains flavoring substances not found in *E. coca*, Trujillo coca was valued in the nineteenth century European and North American pharmaceutical industry for medicinal preparations. Because it is more difficult to extract and crystallize cocaine from Trujillo coca leaves, this variety is not commonly used for



Under the shade of the leguminous tree *Inga cecillia* in Sumbal, La Libertad, Peru, a plantation of Trujillo coca (*Erythroxylon novogranatense* var. *trujilloense*, arrows). — Timothy Plowman

commercial cocaine production (Plowman 1982; Plowman and Rivier 1983).

Trujillo coca is geographically and ecologically isolated from other coca varieties, and no hybrids between them are known. However, Trujillo coca has been crossed experimentally with *E. novogranatense* var. *novogranatense*; successful crosses were obtained in both directions. The resulting hybrids were vigorous and vegetatively normal, and exhibited morphological characters intermediate between the two parents. However, most of the hybrids that flowered showed only 50 percent pollen stainability and a much reduced seed set, suggesting at least partial reproductive isolation between these two varieties (Bohm et al. 1982). Trujillo coca was also crossed with *E. coca* var. *coca*. Although F_1 hybrids were obtained, they were morphologically and developmentally abnormal; many died as seedlings. They produced no flowers and clearly were ill-adapted for survival (Bohm et al. 1982).

While Trujillo coca is in several features intermediate between *E. coca* var. *coca* and *E. novogranatense* var. *novogranatense*, it is clearly most closely related to the latter, with which it also shares important chemical and ecological characteristics (Bohm et al. 1982). Trujillo coca is best classified in the species *E. novogranatense*, but must be recognized as a distinct variety within that species.

Based upon genetic and geographical relationships, it is highly suggestive that Trujillo coca evolved directly from *E. coca* var. *coca* through intensive selection for cultivation in drier habitats, and possibly for more delicate and flavortful leaves and a more robust, leafy habit. Trujillo coca subsequently gave rise to the Colombian variety of *E. novogranatense* in the northern Andes under similar conditions of geographic isolation and continuing human selection.



A flowering branch of Colombian coca (*Erythroxylum novoguinatense* var. *truxillense*) cultivated at Collambay, La Libertad, Peru.

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Erythroxylum Novogranatense Var. Novogranatense, Colombian Coca

The fourth variety of cultivated coca is *Erythroxylum novogranatense* var. *novogranatense*, known as "Colombian coca." This variety differs morphologically from other varieties by its bright yellow-green foliage and lack of persistent stipules. In dried leaf specimens, its identification may be more difficult and require anatomical study (Rury 1981). Colombian coca contains an average of 0.77 percent cocaine, along with relatively high concentrations of cinnamoylcocaine and methyl salicylate (Plowman and Rivier 1983).

Colombian coca is known only as a cultivated plant. Like Trujillo coca, this variety is well adapted to arid conditions and often is cultivated in the drier, inter-Andean valleys of Colombia and along the Caribbean coast. Today, however, it is grown mainly by a few isolated Indian tribes, primarily in the Sierra Nevada de Santa Marta, and in the departments of Santander, Cauca and Huila, up to about 1,800 m elevation. Colombian coca bushes are not grown in neat, terraced rows like Huánuco coca, but rather in small household plots on flat or gently sloping terrain. The bushes are widely spaced and are allowed to grow large compared to Huánuco coca.

Colombian coca is not extensively cultivated for cocaine production owing to the same difficulties in extracting cocaine that are found with Trujillo coca leaves. Colombian coca is used mainly for chewing and as a household medicine. It is also commonly planted as an ornamental and medicinal plant throughout Andean Colombia.

Unlike the other three coca varieties, Colombian coca is quite tolerant of diverse ecological conditions; for this reason, it was the variety introduced widely in horticulture in the last century and distributed to many tropical countries, both as an ornamental and source of cocaine (Plowman 1982). During the early part of the twentieth century it became an important cash crop in Java, where it had been introduced by Dutch colonial planters (Reens 1919a, 1919b).

In South America, Colombian coca is isolated geographically from other coca varieties, in contrast to the more complex distribution patterns seen in Trujillo and Huánuco cocas. This isolation has led to fundamental changes in the flavonoid chemistry and reproductive biology (Bohm et al. 1982). This variety will not cross with *E. coca* var. *coca*, although it will hybridize with Trujillo coca, producing vigorous hybrids albeit with reduced fertility. This suggests that Colombian coca is genetically closely related to Trujillo coca, even though some reproductive barriers between them have developed as a result of geographic isolation. Colombian coca is genetically much more distant from Huánuco coca.

In their breeding mechanisms, most *Erythroxylum* species are strongly self-incompatible, distylous species. Colombian coca is exceptional in being partially self-compatible, and isolated individuals may produce abundant viable seed. Self-compatibility is considered a derived state in plants with a heterostylous breeding system. This fact favors the view that Colombian



An isolated shrub of Colombian coca (*Erythroxylon novogranatense* var. *novogranatense*) cultivated as a medicinal plant in a house garden at Trapiche, Cauca, Colombia.

Timothy Plowman



Figure 1. A coca plantation in the mountains of the Santa Elena Province, Ecuador, at the site of the archaeological excavation of the Machalilla Culture. Photo by Timothy Flannery.

coca is the most specialized and most recently derived variety of the cultivated cocas (Bohm et al. 1982).

Archeological Evidence for Coca Chewing

The earliest archeological evidence suggesting coca is found in the Valdivia Culture on the Santa Elena Peninsula of southwestern Ecuador. Small ceramic lime containers thought to be used in coca chewing were found here that date to Valdivia Phase 4, about 2100 BC (uncorrected radiocarbon dating). A tradition of small, decorated lime pots extends through the Machalilla Culture to Chorrera times (1000-300 BC), when it reached its maximum development. A small ceramic figurine of the Chagras style also was discovered at Valdivia that shows the prominent cheek bulge of a coca chewer. This piece is dated Late Valdivia (1600-1500 BC) and is the earliest known example of a long Ecuadorian tradition of figurines depicting *coqueros* (coca chewers) (Lathrap et al. 1976). Skulls containing heavy accumulations of dental calculus, interpreted as an indication of heavy coca chewing with lime, have been found in a late Chorrera cemetery on the Santa Elena Peninsula (Klepinger et al. 1977). Based on archeological evidence, it appears that coca chewing, and perhaps coca cultivation, were fully established in the Valdivia area by 3000 BC.

Early evidence for coca chewing has been found also on the Peruvian coast in the Late Preceramic Period 6 (2500-1800 BC) in the form of coca-

chewing paraphernalia and possibly coca leaves themselves, although the botanical material was not identified taxonomically. Engel (1957) reported a bottle gourd and three *Mytilus* shells, all containing powdered lime thought to be used with coca, from a burial at Culebras, a site dated at 2000 BC by Bray and Dollery (1983). Engel (1963) found "leaves looking like coca" along with large deposits of burnt lime at Asia in the Omas Valley. Asia is radiocarbon dated at 1314 BC \pm 100, but probably dates to about 1800 BC (M. Mosely, personal communication). Patterson (1971) excavated preserved coca leaves near Ancon in the Gaviota phase dated between 1900 and 1750 BC. Coca was one of the items (along with maize and marine shells) stockpiled in a group of storage structures at Huancayo Alto in the Chillón Valley, dating between 800 and 200 BC (Dillehay 1979). Unfortunately, none of these early records of preserved coca leaves has been botanically identified because none of the original specimens can be located.

Later sites, principally burials, on the Peruvian coast have yielded verifiable archeological coca leaves. Specimens from sites ranging from Lima south to Africa in northernmost Chile were studied morphologically and anatomically and found to correspond closely with modern Trujillo coca, *E. novogranatense* var. *truxillense*; generally the archeological leaves were smaller in size (Rury and Plowman 1984). Earlier authors, unaware of the existence of the Trujillo coca, assumed that archeological coca from coastal Peru was Huánuco coca that originated from the eastern Andes, and they suggested that this showed extensive, early trans-Andean trade from the montaña to the coast (Sauer 1950; Lanning 1967; Lathrap et al. 1976; Klepinger et al. 1977; Cohen 1978; Dobkin de Rios and Cardenas 1980). Although trade in coca from the montaña to the coast may have occurred on a small scale, there is little evidence for it from archeological remains. Because of wet conditions in the montaña and highlands, no early specimens of archeological Huánuco coca leaves have been found (Plowman 1984b).

Further evidence for coca chewing, including lime pots, lime dippers and ceramic, coca-chewing human figurines, as well as occasional preserved leaves, has been found throughout the Peruvian coast from the early ceramic period to Inca times. Both Nazca and Moche ceramics depict numerous examples of coca chewers with cheek bulges, often carrying lime gourds and dippers (Yacovleff and Herrera 1934; Jones 1974; Donnan 1978; Jeri 1980).

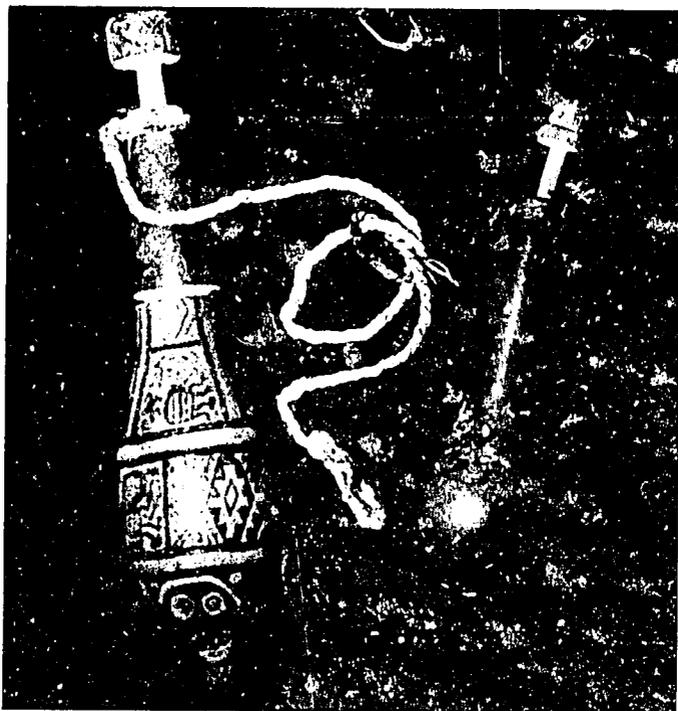
Following the early appearance of coca chewing during the Formative Period in Ecuador, representations of coca chewing in the form of lime pots and coquero figurines are found in all later phases up until Inca times, especially in the provinces of Manabí, Esmeraldas and Carchi (cf. Meggers 1966; Drolet 1974; Naranjo 1974; Jones 1974; Bray and Dollery 1983).

In Colombia, there is abundant archeological evidence for widespread coca chewing in the form of coca-related artifacts. During the first millennium AD, the Quimbaya Culture of the middle Cauca Valley produced numerous, beautifully crafted, gold lime pots and lime dippers. In addition,



Left: Dried leaves of Colombian coca (*Erythroxylum novogranatense* var. *novogranatense*) ready for chewing, as sold in the Sunday market at Silvia, Cauca, Colombia. Timothy Plowman. Right: Cotton bag containing Trujillo coca leaves (*Erythroxylum novogranatense* var. *truxillense*) from an Inca cemetery, Atarco II site, Nazca, Taruga Valley, Ica., Peru. Watis Collection, Accession no. 16-13426, Lowie Museum of Anthropology, University of California, Berkeley. Photograph courtesy of the Lowie Museum of Anthropology.

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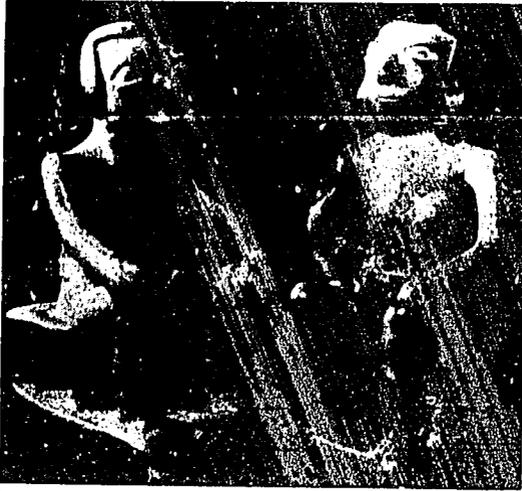


Archaeological lime gourds (*Lagenaria siceraria*) from coastal Peru. The larger decorated specimen is from Huaura Valley, ca. 1000-1275 AD; the smaller undecorated specimen is from Cajamarquilla, Rimac Valley, date uncertain. Peabody Museum of Archaeology and Ethnology, Harvard University. Timothy Plowman

gold figurines carrying lime pots have been found in this culture area (cf. Jones 1974; Antonil 1978; Bray 1978; Hemming 1978). Ceramic lime pots representing coca chewers are also known from Colombia.

In the San Agustín culture of southern Colombia, several monolithic statues have been found that strongly suggest coca chewing by the presence of extended cheek bulges and small bags (for coca leaves) slung across their chests (Perez de Barradas 1940; Uscategui 1954; Reichel-Dolmatoff 1972; Antonil 1978). The San Agustín statues are dated approximately to the first millennium AD. The town of San Agustín long has been, and continues to be, a major center of coca cultivation and distribution in the upper Magdalena Valley.

Archeological evidence that coca chewing reached Central America exists but is of a considerably later date than related findings in South America. Lothrop (1937) reported a small, carved bone head with a prominent cheek bulge from Sitio Conte in the Coclé culture of Central Panama, dated between 500 and 700 AD. This figurine closely resembles figurines from Manabí Province in coastal Ecuador as well as the early Valdivia figurine discussed above. Stone (1977) mentioned small figures of gold and stone from the Diquis region of Costa Rica that show the characteristic cheek bulges of coca chewers.



Ceramic figures of coca chewers of the Capuli style from Nariño, Colombia, 800-1250 AD. Right figure from Museo de Oro, Accession no. CN 3115; left figure from Museo Arqueológico del Banco Popular, Bogotá, Accession no. N-8511.

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Of all the areas from which we have evidence for archeological coca chewing, only in coastal Peru has it been possible to identify the variety of coca used because of its remarkable preservation in the desert environment. Trujillo coca appears here around 1800 BC, although it probably arose elsewhere (see below). Although we have no direct evidence from archeological leaves, it may be assumed that *E. coca* var. *coca* was being cultivated and used for chewing much earlier in the east Andean montaña of Peru and Bolivia. Both Trujillo and Huánuco coca probably were used in parts of Ecuador, where appropriate dry and wet habitats for these varieties exist. Colombian coca was certainly the variety employed in the mountains of Colombia, along the Caribbean coast and probably in Central Panama (Plowman 1984a, 1984b).

The Discovery, Evolution and Early Diffusion of Coca

The following scenario for man's first discovery and cultivation of coca in the montaña has been outlined earlier (Antonil 1978; Plowman 1979a, 1984a, 1984b; Bohm et al. 1982). The palatable, relatively tender, young leaves of *E. coca* var. *coca* must have been sampled first as a famine food by groups of nomadic hunter-gatherers who early inhabited the eastern Andes. At this time, coca existed as small, scattered wild populations in the montaña, similar to the distribution patterns of many wild species today. The stimulant and medicinal properties of the leaves were discovered, probably more than once, during this early period of experimentation. Once the stimulating effects of the leaves were known, they were routinely gathered from the forest for daily use. Refinements in the use of coca, including sun-drying the leaves, holding them in the mouth as a quid, and the addition of an alkaline substance, gradually developed and became customary. Numerous alkaline sources have been employed in chewing coca as with

other drugs such as tobacco. In the montaña, the simplest and most readily available alkaline source is the ashes prepared from a wide variety of plants (Plowman 1980; Rivier 1981).

As supplies in the wild became insufficient to meet the needs of a growing, coca-chewing population, coca shrubs were transplanted from the wild, nearer to habitations so that a constant supply of fresh leaves would be available. In this context, coca must have been one of the earliest plants cultivated in the montaña and must be implicated in the earliest development of agriculture in this area. The first use and cultivation of coca certainly antedates the first appearance of any archeological evidence (such as ceramic representations of coca chewers or coca-chewing paraphernalia) by several thousand years.

Based on botanical and chemical evidence cited earlier, Trujillo coca is thought to be an intermediate between Huánuco coca and Colombian coca, forming a linear evolutionary sequence (Bohm et al. 1982). Although the area of origin of Trujillo coca remains a mystery, it is possible that this variety evolved from populations of Huánuco coca in adapting to drier habitats as man extended the range of coca into new areas. The most likely areas for this to occur are the more arid Andean valleys that lie adjacent to the wetter montaña habitats of Huánuco coca. Interspersed throughout the central montaña are locally drier valleys, such as the Tarapoto basin in San Martín and La Convención in Cuzco, where Huánuco coca can still be cultivated. However, this variety is not found in the adjacent arid, thornscrub areas of the upper Marañón and its tributaries in northern Peru. This is precisely the kind of habitat where plantations of Huánuco coca are replaced by the Trujillo variety.

At some unknown, early date, populations of *E. coca* var. *coca* were adapted to successively drier valleys through a long period of gradual selection for successful cultivation in these areas. Many intermediate forms must have developed during this time in isolated valleys, and some hybridization must have continued to occur among them. Eventually genetic barriers to such hybridization developed, resulting in the genetically stable species *E. novogranatense* (as var. *truxillense*). Although certain crucial areas of northern Peru remain to be explored for possible intermediates, no natural hybrids between Huánuco and Trujillo coca have been observed.

Once Trujillo coca became established as a species, it was taken to new arid areas that were previously inhospitable for coca cultivation. It is possible that this variety of coca was cultivated at an early Valdivia site on the arid Santa Elena Peninsula in Ecuador 5,000 years ago and later diffused southward along the desert coast of Peru, where it appears in archeological sites around 2000 BC. This early Ecuadorean distribution for Trujillo coca is supported by the discovery in 1978 of isolated, remnant patches of this variety being cultivated in Carchi on the Pacific slope. These populations lie far from the only other existing populations of Trujillo coca in northern Peru and may be remnants of plants once widely grown along the coast of Ecuador (Plowman 1979a, 1984b; Bohm et al. 1982). Unfortunately, coca

was almost completely eradicated in Ecuador owing to the incessant persecution of coca chewing by ecclesiastic and government officials that began in the sixteenth century (Leon 1952; Gagliano 1960, 1976; Naranjo 1974). This persecution succeeded in eliminating most of the germ plasm that could have answered key questions about the early evolution of the plant.

The hypothesis that Trujillo coca appeared very early in Ecuador is complicated by the existence of Huánuco coca in moist, forest areas on both sides of the Ecuadorian Andes. Because we lack archeological coca specimens from Ecuador, it is impossible to know with certainty which variety was used at Valdivia or other archeological sites in Ecuador. But it is certain that coca was widely cultivated and employed prior to the European invasion, possibly as a result of the earlier Inca expansion into present-day Ecuador (cf. Meggers 1966; Patiño 1967; Drolet 1974; Naranjo 1974; Lathrap et al. 1976). It is entirely possible that both Trujillo and Huánuco coca varieties were cultivated in their respective ecological zones in pre-Columbian Ecuador.

Similar to the mechanisms by which Trujillo coca originated through selection and isolation in drier areas of northern Peru or southern Ecuador, it is likely that Colombian coca arose in the isolated mountain valleys of southern Colombia, from populations of Trujillo coca in Ecuador. Through continuing selection, Colombian coca differentiated as a distinct variety, but did not diverge sufficiently to become a separate species. It then diffused throughout the mountains of Colombia, to the coast of Venezuela and northward into Central America (Bohm et al. 1982; Plowman 1984b).

It is significant that the four cultivated cocas are completely allopatric in their geographic ranges, and no hybrids have ever been found in areas between these ranges. They remain morphologically, chemically, genetically and ecologically distinct. This is the result of several thousand years of cultivation, selection and diffusion throughout the tropical Andes by peoples who very early learned to appreciate the unique qualities of the coca leaf.

Future studies on the origin and evolution of coca will follow various directions, including biochemical comparisons of extant varieties and further investigation of documented archeological remains. Most urgent, however, is the need for extensive field work on remaining coca varieties in South America in order to document the many local forms that exist. An intensive effort in Ecuador is required to search for any relictual populations of coca, especially on the coast. The discovery of any indigenous coca plants in Ecuador is likely to provide key botanical, chemical and possibly ethnographic data for resolving several unanswered questions on the evolution of the plant.

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Bibliography

- Allen, C. J.
1981 To Be Quechua: The Symbolism of Coca Chewing in Highland Peru. *American Ethnologist*, 8(1):157-171.
- Antonil
1978 *Mamacoca*. London: Hassle Free Press.
- Bohm, B. A., F. R. Ganders and T. Plowman
1982 Biosystematics and Evolution of Cultivated Coca (*Erythroxylaceae*). *Systematic Botany*, 7:121-133.
- Bray, W. and C. Dollery
1983 Coca Chewing and High-Altitude Stress: A Spurious Correlation. *Current Anthropology*, 24:269-282.
- Burchard, R. E.
1975 Coca Chewing: A New Perspective. In V. Rubin, ed. *Cannabis and Culture*. The Hague: Mouton. pp. 463-484.
- Carter, W. E., M. Mamani P. and J. V. Morales
1981 Medicinal Uses of Coca in Bolivia; In J. W. Bastien and J. M. Donahue, eds. *Health in the Andes*. Washington, DC: American Anthropological Association. pp. 119-149.
- Carter, W. E., M. Mamani P., J. V. Morales and P. Parkerson
1980 *Coca in Bolivia*. La Paz: US National Institute of Drug Abuse
- Cohen, M. N.
1978 Archeological Plant Remains from the Central Coast of Peru. *Nawpa Pacha*, 16:36-37.
- Daneri Perez, M. R.
1974 El Cultivo de la Coca en el Perú. Unpublished thesis, Universidad Nacional Agraria La Molina, Lima.
- Dillehay, T. D.
1979 Pre-Hispanic Resource Sharing in the Central Andes. *Science*, 204(6): 24-31.
- Dobkin de Rios, M. and M. Cardenas
1980 Plant Hallucinogens, Shamanism and Nazca Ceramics. *Journal of Ethnopharmacology*, 3:233-246.
- Donnan, C. B.
1978 *Moche Art of Peru*. Los Angeles: Museum of Cultural History, University of California.
- Drolet, R.
1974 Coqueros and Shamanism: An Analysis of the Capuli Phase of Ceramic Modeled Figurines from the Ecuadorian Northern Highlands, South America. *Journal of the Steward Anthropological Society*, 5(2):99-121.
- Duke, J. A., D. Aullik and T. Plowman
1975 Nutritional Value of Coca. *Botanical Museum Leaflets*, (Harvard University), 24:113-119.
- Engel, F.
1957 Early Sites on the Peruvian Coast. *Southwestern Journal of Anthropology*, 13:54-68.

- 1963 A Pre-ceramic Settlement on the Central Coast of Peru: Asia, Unit 1. *Transactions of the American Philosophical Society*, 53(3):77.
- Fabrega, H. and P. K. Manning
1972 Health Maintenance Among Peruvian Peasants. *Human Organization*, 31(3): 243-255.
- Gagliano, I. A.
1960 A Social History of Coca in Peru. Unpublished thesis, Georgetown University, Washington, DC.
1976 Coca and Popular Medicine in Peru: An Historical Analysis of Attitudes. In F. X. Grollig and H. B. Haley, eds. *Medical Anthropology*. The Hague: Mouton. pp. 49-66.
- Ganders, F. R.
1970 Heterostyly in *Erythroxylum coca* (Erythroxylaceae). *Journal of the Linnean Society. Botany*, 78:11-20.
- Grinspoon, L. and I. B. Bakalar
1976 *Cocaine: A Drug and Its Social Evolution*. New York: Basic Books.
1981 Coca and Cocaine as Medicines: An Historical Review. *Journal of Ethnopharmacology*, 3:149-159.
- Gutierrez Noriega, C. and V. Zapata-Ortiz
1948 Observaciones Fisiologicas y Patologicas en Sujetos Habitados a la Coca. *Revista de Farmacologia y Medicina Experimental* (Lima), 1: 1-31.
- Hegnauer, R.
1981 Chemotaxonomy of Erythroxylaceae (Including Some Ethnobotanical Notes on Old World Species). *Journal of Ethnopharmacology*, 3:279-292.
- Hegnauer, R. and L. K. Fikenscher
1960 Untersuchungen mit *Erythroxylum coca* Lam. *Pharmaceutica Acta Helvetica*, 35:43-64.
- Hemming, J.
1978 *The Search for El Dorado*. London: Michael Joseph.
- Holmstedt, B., J. E. Lindgren, L. Rivier and T. Plowman
1979 Cocaine in Blood of Coca Chewers. *Journal of Ethnopharmacology*, 1: 69-78.
- Hulshof, J.
1978 La Coca en la Medicina Tradicional Andina. *América Indígena*, 38: 837-846.
- Jeri, F. R., ed.
1980 *Cocaine 1980*. Lima: Pacific Press.
- Jones, J.
1974 *Rituals of Euphoria: Coca in South America*. New York: Museum of Primitive Art.
- Klepinger, L. L., J. K. Kuhn and J. Thomas, Jr.
1977 Prehistoric Dental Calculus Gives Evidence for Coca in Early Coastal Ecuador. *Nature*, 269:506-507.
- Lanning, E. P.
1967 *Peru Before the Incas*. Englewood Cliffs, NJ: Prentice-Hall.
- Lathrap, D. W., D. Collier and H. Chandra
1976 *Ancient Ecuador: Culture, Clay and Creativity, 3000-300 BC*. Chicago: Field Museum of Natural History.
- Leon, L. A.
1952 Historia y Extinción del Cocaismo en el Ecuador, sus Resultados. *América Indígena*, 12:7-32.
- Lothrop, S. K.
1937 Coclé: An Archeological Study of Central Panama. *Memoirs of the Peabody Museum of Archaeology and Ethnology, Harvard University*, 7: 1-206.
- Machado, C. E.
1972 El Género *Erythroxylum* en el Perú. *Raymondiana*, 5:5-101.

- Martin, R. T.
 1970 The Role of Coca in the History, Religion and Medicine of South American Indians. *Economic Botany*, 24:422-438.
- Mayer, E.
 1978 El Uso Social de la Coca en el Mundo Andino: Contribución a un Debate y Toma de Posición. *América Indígena*, 38:849-865.
- Meggers, B. J.
 1966 *Ecuador*. New York: Praeger.
- Montesinos, F. A.
 1965 Metabolism of Cocaine. *Bulletin on Narcotics*, 17:11-19.
- Mortimer, W. G.
 1901 *History of Coca*. New York: J. H. Vail.
- Naranjo, P.
 1974 El Cocaismo entre los Aborígenes de Sud América: Su Difusión y Extinción en el Ecuador. *América Indígena*, 34:605-628.
- Novak, M., C. A. Saleminck and I. Khan
 1984 Biological Activity of the Alkaloids of *Erythroxylum coca* and *Erythroxylum novogranatense*. *Journal of Ethnopharmacology*, 10: 261-274.
- Patiño, V. M.
 1967 Plantas Cultivadas y Animales Domésticos en América Equinoccial. *Fibras, Medicinas, Misceláneas*, Vol. 3. Cali, Colombia.
- Patterson, T. C.
 1971 Central Peru: Its Population and Economy. *Archaeology*, 24:316-321.
- Perez de Barradas, J.
 1940 Antigüedad del Uso de la Coca en Colombia. *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales*, 3:323-326.
- Plowman, T.
 1979a Botanical Perspectives on Coca. *Journal of Psychedelic Drugs*, 11: 103-117.
 1979b The Identity of Amazonian and Trujillo Coca. *Botanical Museum Leaflets* (Harvard University), 27:45-68.
 1980 Chamairo: *Mussatia hyacinthina* – An Admixture to Coca from Amazonian Peru and Bolivia. *Botanical Museum Leaflets* (Harvard University), 28:253-261.
 1981 Amazonian Coca. *Journal of Ethnopharmacology*, 3:195-225.
 1982 The Identification of Coca (*Erythroxylum* Species): 1860-1910. *Journal of the Linnean Society, Botany*, 84:329-353.
 1984a The Ethnobotany of Coca (*Erythroxylum* spp., Erythroxylaceae). *Advances in Economic Botany*, 1:62-111.
 1984b The Origin, Evolution and Diffusion of Coca, *Erythroxylum* spp., in South and Central America. In D. Stone, ed. *Pre-Columbian Plant Migration. Papers of the Peabody Museum of Archeology and Ethnology*, 76:125-163.
- Plowman, T. and L. Rivier
 1983 Cocaine and Cinnamoylcocaine Content of Thirty-One Species of *Erythroxylum* (Erythroxylaceae). *Annals of Botany* (London), 51: 641-659.
- Reens, E.
 1919a *La Coca de Java: Monographie Historique, Botanique, Chimique et Pharmacologique*. Lons-le-Saunier: Lucien Declume.
 1919b *La Coca de Java*. *Bulletin des Sciences Pharmacologiques*, 21:497-505.
- Reichel-Dolmatoff, G.
 1972 *San Agustín*. New York: Praeger.
- Rivier, L.
 1981 Analysis of Alkaloids in Leaves of Cultivated *Erythroxylum* and Characterization of Alkaline Substances Used During Coca Chewing. *Journal of Ethnopharmacology*, 3:313-335.

- Rostworowski, M. de Diez Canseco
 1973 Plantaciones Prehispánicas de Coca en el Vertiente de Pacífico. *Revista del Museo Nacional* (Lima), 39:193-224.
- Rury, P. M.
 1981 Systematic Anatomy of *Erythroxylum* P. Browne: Practical and Evolutionary Implications for the Cultivated Cocas. *Journal of Ethnopharmacology*, 3:229-263.
 1982 Systematic Anatomy of the Erythroxylaceae. Unpublished thesis, University of North Carolina, Chapel Hill.
- Rury, P. M. and T. Plowman
 1983 Morphological Studies of Archeological and Recent Coca Leaves (*Erythroxylum* spp., Erythroxylaceae). *Botanical Museum Leaflets* (Harvard University), 29:297-341.
- Saenz, L. N.
 1941 El Coqueo Factor de Hiponutrición. *Revista de la Sanidad de Policía* (Lima), 1:126-147.
- Sauer, C. O.
 1950 Cultivated Plants of South and Central America. In J. H. Steward, ed. *Handbook of South American Indians, Vol. VI. Physical Anthropology, Linguistics and Cultural Geography of South American Indians*. Washington, DC: Smithsonian Institution. pp. 487-543.
- Schultes, R. E.
 1957 A New Method of Coca Preparation in the Colombian Amazon. *Botanical Museum Leaflets* (Harvard University), 17:241-246.
 1981 Coca in the Northwest Amazon. *Journal of Ethnopharmacology*, 3:173-194.
- South, R. B.
 1977 Coca in Bolivia. *Geographical Review* (New York), 67:22-33.
- Stone, D.
 1977 *Pre-Colombian Man in Costa Rica*. Cambridge: Peabody Museum Press.
- Uscategui, N.
 1954 Contribución al Estudio de la Masticación de las Hojas de Coca. *Revista Colombiana de Antropología*, 3:207-289.
- Weil, A. T.
 1981 The Therapeutic Value of Coca in Contemporary Medicine. *Journal of Ethnopharmacology*, 3:367-376.
- Yacovleff, E. and F. L. Herrera
 1934 El Mundo Vegetal de los Antiguos Peruanos. *Revista del Museo Nacional* (Lima), 3:243-326.
 1935 El Mundo Vegetal de los Antiguos Peruanos. *Revista del Museo Nacional* (Lima), 4:31-102.
- Zapata-Ortiz, V.
 1970 The Chewing of Coca Leaves in Peru. *International Journal of Addiction*, 5:287-294.

COCA AND CULTURAL IDENTITY IN ANDEAN COMMUNITIES

Catherine J. Allen

Coca is an integral part of the lives of Quechua- and Aymara-speaking people in Peru and Bolivia, where it serves as a powerful symbol of cultural identity. These Andean nations currently find themselves under international pressure to eradicate coca cultivation in order to stem cocaine production. This pressure predates the "cocaine boom," however. In 1950, for example, UNESCO recommended that governmental policy "limit the production of coca leaf to control its distribution and eradicate the practice of chewing it" (1950:94). In light of this situation we urgently need a better understanding of the cultural and biological aspects of traditional coca consumption. Native consumers of coca—as opposed to cocaine—would be profoundly affected by eradication of the leaf.

Coca leaf is a mild stimulant, chewed routinely and used in religious ritual by millions of people in the Andes and Amazonia.¹ This paper is about the cultural meaning that coca holds for traditional users of the leaf in the Southern Peruvian Andes. Ideally these cultural aspects of coca use should be treated in relation to its nutritional and pharmacological aspects, as well as the history, economics and politics of coca production. As other papers in this volume will be dealing with these issues, I will focus on the role coca chewing plays in the expression and maintenance of social relations in indigenous Andean communities.

However, I think it is necessary at the outset to say a few words about coca's physiological effects (see Plowman this volume). When coca leaves are masticated with calcium carbonate, they act as a mild stimulant, giving the chewer a feeling of energy and mental clarity, and somewhat reducing sensations of hunger, thirst and fatigue. These effects are similar in degree to those produced by a cup of coffee or a cigarette, and — even when coca is chewed continuously over several hours — are very different from the effects produced by ingesting cocaine. Enrique Mayer (1978:849) has likened the difference between coca chewing and cocaine use to the difference between traveling by donkey and traveling by jet plane.

The high altitude Andean environment—with its cold temperatures, scarce oxygen and intense ultraviolet light—is one of the most physiologically stressful environments to which human beings have ever adapted. In high altitude communities life is exhausting, not only to the newcomer from sea level, but to the native people who are physiologically more adapted and who live out their lives in this barren environment. Coca leaf is heavily consumed in communities of the *puna* (high Andean grasslands), where subsistence is based almost exclusively on potato

cultivation and herding sheep, llamas and alpacas. In lower altitude, maize-growing communities of the Andes, coca is chewed more sparingly, but the fundamental cultural importance of coca as a medium of social interaction and religious ritual remains essentially the same.

My research on coca chewing was based primarily in Sonqo, a Quechua-speaking community of 84 dispersed households, located at an altitude of approximately 3,600 m in the District of Colqepata, Province of Paucartambo, northeast of the city of Cuzco in southern Peru.² The Sonqueños call themselves *runa* (Quechua for human being) and consider themselves descendants of the Incas, in contrast to the *mistis* (mestizos) of the district capital, who are descendants of the *castellanokuna*, or Spanish.

The community's subsistence economy is based on potato cultivation, complemented with beans and other tubers, and on sheep, llama and alpaca herding for meat and wool. Increasingly, oats and barley are being raised as cash crops, and the community is being incorporated rapidly into the money economy. Coca leaf, of course, does not grow in Sonqo and is usually purchased with cash at markets in Colqepata, the district capital, and in the city of Cuzco. In addition, Sonqueños sometimes work as seasonal laborers in coca plantations, where they are paid in kind or buy coca with their wages. Occasionally a peddler comes through the community on foot with coca for sale or barter.

In Sonqo I was told that all the skills basic to human life were originally invented by specific saints. San Isidro invented plowing, for example, and Santa Rosa invented weaving when she needed a bridge to cross a ravine. Coca chewing, called *hallpay*, is considered to be one of these essential adult skills. It was invented by Santísima Maria when she lost her child and absent-mindedly chewed on some leaves to allay her grief. While I lived in Sonqo, I learned to chew coca, not because I had originally intended to study it, but because it was impossible to function as a social person without it. It was not just a matter of putting coca leaves in my mouth; I had to learn to chew it properly, like a *runa*, observing customary ceremonial behavior.

I remember a middle-aged man talking about "gringo" tourists he had seen chewing coca in the ruins at P'isaq. He was revolted at the way they crammed handfuls of the leaf into their mouths with a total unconcern for propriety. "I never saw anything like it," he said. "They were like horses."

Hallpay provides the social frame within which peaceful and constructive interaction takes place. An invitation to chew coca is an invitation to convivial social intercourse. Friends who meet on the road sit down to chat and chew coca; men who gather to work in a field settle down to chew coca for a while beforehand. When something serious or troubling has to be discussed, the shared chewing of coca leaves expressed the participants' commitment to rational and peaceful discourse. For a person working alone, the brief hallpay provides a meditative interlude in which to prepare mentally for the task ahead.

Adults chew coca after their three daily meals and in addition pause in



A family relaxes during a coca break in the afternoon

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mid-morning and mid-afternoon for a coca break. In light of the old contention that coca chewing fosters malnutrition by ruining the appetite (Gutiérrez Noriega 1949:151-152; UNESCO 1950:93), it is worth emphasizing that coca is chewed after rather than before meals. No one who has actually observed the customs regulating coca chewing (not to mention the quantities of food these people chewing coca can consume!) could sustain this “food deprivation” hypothesis.⁴

When two or more people settle down and open their coca bundles for hallpay, each of them offers the others tiny, carefully composed bundles of coca leaves, called *kintus*. (The exact form of this coca sharing etiquette varies from region to region. For example, in the movie *Yawar Mallku*, Qollahuaya Quechua-speakers exchange their coca bags rather than the *kintus*.) In Sonqo, the *kintus* are proffered with the right hand, or, in a formal situation, with both hands. It is accompanied by an invitation to chew coca, such as *Hallpakusianchis* (“Let us chew coca together”) and accepted with thanks. Unless the gathering is large – more than six people – each participant tries to offer *kintus* to each of his or her companions and to



A young man offers a coca kintu to his wife.

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reciprocate all the k'intus offered. It is virtually impossible to reject proffered k'intus; to do so signifies a rejection of social relations and an act of hostility.

While the k'intu exchanges draw each member of a group into interaction with his or her companions, and each individual offers k'intus to each of the others and receives k'intus from them, a kind of social ranking is implied in the order in which the k'intus are offered. K'intus should be offered to persons of higher social status before those of lower status. How status is determined, however, is seldom clear-cut. Men rank higher than women, and age ranks higher than youth. A guest ranks higher than a co-resident. The respectable passing of many *cargos*⁴ confers higher rank than marginal participation in the cargo system. Wealth itself does not confer high status, but it facilitates the passage of cargos, which does. Thus, each coca chewing session calls for a complicated spur-of-the-moment recognition of these various criteria, forcing each participant to organize the situation in hierarchical terms and place him or herself within this hierarchy. Moreover, each participant sees himself "put in his place" by the way in which his companions rank him. The k'intu exchanges, which commit each participant—at least for the duration of the hallpay—to group membership, and which situate him or her relative to the others thus defines any gathering of individuals as a social group.

Coca chewing commits an individual to participate constructively in these fairly casual social situations. But in addition, coca is used to seal more important and long-term contracts. For example, an individual signifies acceptance of a community cargo by receiving a bundle of coca from the *alcalde* (mayor). Rejecting the coca signifies a rejection of the cargo. Similarly, an agreement to participate in a reciprocal labor exchange is sealed by the acceptance of coca. When a couple enters into *sirwinakuy*, the first stage of marriage, for example, the bride's parents signify their agreement by accepting coca from the parents of the groom.

Why does coca carry such a heavy, symbolic load? What is it about coca that renders its presentation so significant? Accepting an offer of coca implies, at the least, an agreement to polite interaction; it can also signify a commitment to onerous community service or even life-long affinal bonds. To understand this we need to examine coca within the context of Andean religious ideology. The routine k'intu exchange provides insight into this question.

Up to this point my description of hallpay has omitted a critical aspect of the process—the act of *phukuy* or blowing on the k'intu while waving it gently in front of the mouth. An individual who opens his coca bag, or her coca bundle, for hallpay blows over the first k'intu, while invoking the Earth (*Pacha Mama*, or *Santa Tira*), sacred places (*tirakuna*, *apukuna*, etc.) and the *ayllu* (the community, as *Sonqo*, or as the ancestral *machulas* or old grandfathers). For example, a common *phukuy* is "*Santa Tira, tirakuna, Sonqo.*" Sometimes a request is added, such as "Let me have a good trip!" or "Don't let it rain on my potato planting!" Ideally, this procedure should be



A married couple stands in front of their house. — Catherine J. Allen

repeated with every *k'intu*, although after consuming the first *k'intu*, the duty is often discharged by simply waving the *k'intu* in front of the mouth before consuming it.

For Sonqueños, as for other native Andeans, every landmark — from the high snow-capped peaks to the ridges, rock outcrops and lakes — is experienced as alive and powerful, possessing a name and individual personality. The Earth as a whole is also felt to be alive, with a primarily female identity. It is difficult for cultural outsiders to appreciate the strength and depth of the emotional, cognitive and moral bonds Andean people have with *Pacha Mama* and the *tirakuna* around them. It is not a sentimental attachment to ancestral soil, but something far more profound.

Cognitively, runa orient themselves in space with reference to these landmarks, rather than to abstract cardinal directions. Urton (1981) notes that the motions of the celestial bodies are reckoned with reference to landmarks on the horizons, for in the southern hemisphere there is no Polaris to provide a fixed reference point in the turning sky.

Furthermore, the fact that these tirakuna are felt as presences, as personalities, gives them social and religious dimensions. The places of an individual's locality are like guardian deities; they are *uywaqniyku*, "the ones who nurture us." The relationship between members of a community and its tirakuna is said to be like the relationship between parents and children. They – the tirakuna – are said to watch over human behavior; they can control the weather, as well as health, luck and prosperity of individuals according to their social and ritual comportment.

The community's ancestors, as a general category of machulas are said to live on Sonqo's most sacred hill, Antaqaqa, and certain specific ancestors are said to have originated from other places in Sonqo's territory. Sonqueños also say that the places are what define them as an ayllu. The ayllu, the basic unit of Andean social organization, occurs in many different forms throughout the Andes. An ayllu is created when runa build a house or houses on a named place. The ayllu does not consist simply of the group of co-resident individuals, nor of the named place by itself: it exists only when these entities – people, houses, the place – are brought into relation to each other.

In Sonqo a single neighborhood, even a single house, can be termed an ayllu. But the concept is an expansive and, ideally, all-encompassing one. Together, the collection of neighborhood-level ayllus located on the great many-armed ridge called Sonqo, make up Sonqo Ayllu which belongs to Colqepata Ayllu, the district that belongs to Paucartambo Ayllu, the province that belongs to Cuzco Ayllu, the department, and so on. Whatever its level of inclusiveness, any given ayllu includes only runa as its members. Peruvian nationals of Hispanic heritage do not belong to ayllus. I was told, for example, that when a school was built in Sonqo, and mestizo school teachers came to live there, that place ceased to be an ayllu. The reason for this limitation – that only runa belong to ayllus – is that it is the relationship between runa and their places that binds a group of people into a single entity, the ayllu. Individual persons are collected and defined as a social group or community by virtue of their common orientation to the tirakuna that nurture and discipline them, and to whom they owe filial devotion.

It is with coca leaves that runa show this filial devotion, for coca is the medium of communication with the powerful and unpredictable earth deities on and among whom they live. Although the Christian god and saints also figure in their syncretic religion, it is the Earth in its general and localized aspects that enters the consciousness most strongly and is felt as a presence in daily life. Therefore, the most basic religious duty is phukuy, the blowing of coca leaves while calling on Pacha Mama, on specific tirakuna and on the ayllu.

In phukuy the animating essence of the leaves, called *sami*, is sent to Pacha Mama and the tirakuna. The invocation directs it, for example, to a specific mountain known to control the weather, or to the *machula aulanchis*, the ancestral grandfathers who control crop fertility. When important matters are at hand, the phukuy should be sent carefully and single-mindedly, with great concentration. It takes a strong and practiced individual, like a *paqo* (ritual specialist) to do a really effective phukuy. When I left Sonqo in August 1984, a *paqo* there asked me to tell him the exact time my plane was supposed to leave so he could do phukuy for my trip at the very moment of my departure. "*Noqaqa yachan allinta*" or "I know [how to do it] very well," he said proudly.

Any substance which, in its appearance or effects, has fortifying, animating qualities is said to possess the *sami*. In addition to coca, cooked food, alcohol and medicinal herbs are all considered to be *samiyuq* (possessing *sami*). Carbonated beverages are recognized as *samiyuq* through the many small bubbles that spontaneously escape from them. People, too, may possess the *sami*. An inspired musician is *samiyuq*. In all its forms, the *sami* is a suitable offering to Pacha Mama and the tirakuna. Coca's *sami* is manifested through its energizing and medicinal qualities. Of all substances, it is the most essential ingredient of ritual offerings.

In collective rituals—like Carnival, saints' days or rituals held for the herds' fertility—that the community as a whole or members of an extended family observe, alcohol complements coca as an essential ingredient of the ritual. The efficacy of these rituals is thought to depend on a collective intoxication produced by the heavy consumption of alcohol (e.g., see Allen 1982). I think that coca helps maintain this ritual inebriation by counteracting the depressive effects of the alcohol, allowing the festival to go on and on for hours or even days.

In contrast, routine daily coca chewing, unaccompanied by alcohol, is felt to clear the head and be conducive to hard work. In both routine hallpay and in intoxicated rituals, however, individuals are collected and organized as a group through the sharing of coca leaves which are simultaneously shared with the deities. Pacha Mama and the tirakuna, who monitor human behavior and control human welfare, are a constant presence whenever coca is chewed.

Coca is a communicator, a kind of transmitter for messages between humans and deities. In phukuy, human beings send the *sami* of the coca to supernatural beings, along with requests for specific kinds of aid. In divination sessions the deities themselves communicate with humans through the configurations of coca leaves. As the *paqo* throws down the leaves, he carefully calls to specific tirakuna whose knowledge and advice are needed.

In the more routine coca chewing session the social relations of daily life, which include relations with the tirakuna, are defined, elaborated and affirmed through the ubiquitous ceremony of coca chewing. Sonqueños describe coca as a sacrament. It is, they say, *Hostia*, "the Host," in an explicit analogy with the Catholic communion service.



A family chews coca during animal fertility rituals on the feast of San Juan.

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Mary Douglas says that "Sacraments are not only signs, but essentially different from other signs, being instruments" (Douglas 1973:73). Douglas was referring to the wine and wafer, but the description certainly holds for coca leaf as well. From an Andean perspective, coca plays both symbolic and instrumental functions in social relations. Coca chewing not only is a sign of orderly social relations; it is also an instrument through which these relations are created and maintained. For only through the coca's *sami* are the deities included as part of social interaction. This transforms a social interchange into a kind of sacred contract. While hallpay exhibits characteristics of our "coffee break," it also shares aspects of Holy Communion.

For *runa* to be without coca, then, is literally a kind of excommunication. But it is a cultural excommunication, for through the act of chewing and sharing coca leaves, an individual sums up several basic aspects of his or her cultural identity. Cognitively the individual is oriented in space by invoking specific *tirakuna* and *Pacha Mama* as a generalized whole. Socially the individual is defined as a member of a group—a specifically Andean type of social group, moreover—defined through common orientation to specific *tirakuna*. Through the *k'intu* exchanges and *phukuy* the individual expresses, both symbolically and literally, adherence to the ethic of reciprocity, which is the moral (not to mention economic) foundation of traditional Andean culture (e.g., see Alberti and Mayer 1974; Mayer 1975; Nuñez de Prado Bejar 1972; Isbell 1978). In historical terms hallpay signifies one's adherence to customs that originated with the Incas rather than Hispanic society. The moral, social, thinking being is expressed in hallpay. Indeed, the simple act of coca chewing carries a heavy load of meaning. No wonder my Andean acquaintance was so repelled and mystified by the tourists who gobbled up coca without any awareness of the leaf's significance—like animals rather than human beings.

What is the future of coca chewing for native Andean people? Since I first went to Sonqo in 1975, coca has become progressively scarcer through the Peruvian highlands. Heavy taxes and restrictions on the transportation of the leaf have raised the cost of coca and decreased its availability. On a visit to Sonqo, in November 1985, I found that members of the civil guard stationed in the district capital, had forbidden the sale of coca at the local Sunday market and that passengers and trucks were regularly searched for hidden supplies of the leaf. *Sonqueños* complained angrily about the situation, and the younger men with some urban experience were particularly articulate. "How can this suppression of our coca affect the supply of drugs in your country [US]?" they asked me several times. "We have nothing to do with the drug traffickers."

Nevertheless, in *puna* communities like Sonqo, where life is most traditional and most harsh, coca remains an indispensable element of social life. Although it is chewed far more sparingly and at greater expense than previously, the exchange of a few leaves—or crumbs—of coca still accompanies most social activity whenever possible.



Sonqueños dance during animal fertility ceremonies on the feast of San Juan.

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In July 1980 when I asked Sonqueños what they would do if they could no longer obtain coca nearby, people said they'd travel to Cuzco or to the *monti* (lowlands) for it. Indeed, this is what they are now doing but at great personal risk.

Needless to say, in communities where coca is unavailable life does go on. Hallpay is one thread in the total fabric of Andean life; without it the fabric is badly frayed but does not disintegrate. Social relations continue without the backdrop of coca, signaled by the exchange of endearments, food, alcohol and, increasingly, cigarettes. My impression is that as coca use diminishes, the consumption of cigarettes and alcohol (particularly commercial beer and *aguardiente* or sugar cane alcohol) increases. Alcohol is disastrous as a routine medium of social interaction, especially in a culture emphasizing ritual intoxication. The long-term deleterious effects of cigarette smoking are well known, especially in an environment conducive to respiratory ailments. This provides a striking contrast with the increasing evidence for coca's beneficial effects and the lack of evidence for negative consequences of long-term coca chewing.

By pointing out the importance of coca to native Andean life, I make no claim that the culture will suddenly collapse without it. The social and biological effects of the loss will not surface immediately, but rather will be evidenced in the steady erosion of the traditional cultural and biological adaptation to the Andean environment. The suppression of coca is part of more general social processes that impoverish the Andean cultural tradition. With the loss of coca native Andean people are bereft of a major vehicle for self-expression as Andeans. With each such fray in the cultural fabric, the traditional way of life becomes progressively less coherent and less satisfying.

But we must ask whether this is necessarily bad. As it has developed in the centuries since the conquest, indigenous Andean culture is perhaps inextricably associated with conditions of economic and social oppression. Although native Andean people have shown remarkable resilience in maintaining their way of life in the face of social, religious and economic forces beyond their control, this stubborn defensiveness has perhaps doomed them to poverty and powerlessness in terms of the national structures. With increased industrialization and improved transportation and communication, the old strategies of closure and insulation are neither possible nor desirable.

By emphasizing the importance and value of coca to indigenous Andean culture I do not intend to advocate a conservative retrenchment into tradition and a rejection of changes that are inevitable and often desirable. Sonqueños are desperately poor, and increased opportunities for them to improve the material conditions of their lives are all to the good. I personally find it unfortunate that this improvement has to be attained by the repudiation of one's runa identity, by exchanging the coherence of the ayllu for the individualistic and materialistic orientation of urban life and the money economy. Urban migrants enter the lowest rung of the socioeconomic ladder, with limited upward mobility. To me, it seems like a poor exchange—rural poverty for urban squalor.

But it is not my exchange to make; these are their life decisions, not mine. They are the ones who must do the changing. My point—writing as a North American for a primarily North American audience—is that Andean people should be able to change on their own terms to the greatest extent possible. If they must redefine themselves, the definition should come from within rather than from outside and imposed on them. Whether Andean people continue to chew coca in this period of social transformation is their own business. The decision should not be foisted upon them as a by-product of North American drug problems.

Notes

¹It is difficult to estimate with any precision the total number of people who chew or otherwise use coca leaf for social, medicinal and religious purposes (for a review of estimates see Grinspoon and Bakelar 1976:13). In 1978 the Inter-American Indian Institute conservatively estimated the indigenous population of Peru at 6,025,110 and that of Bolivia at 3,526,026 (Mayer and Masferrer 1979:248). Most adult indigenous males chew coca, while the percentage of female chewers varies considerably from region to region; children, of course, do not chew coca. Nevertheless, we should bear in mind that coca has important medical and religious functions in the lives of most indigenous non-chewers as well. The number of regular coca chewers certainly is well over 2,000,000, while the number of people for whom coca carries cultural importance must be over 5,000,000.

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³See Picon-Reategui 1968; Hanna 1971a, 1971b, 1974; Burchard 1975, 1978, 1979; Bolton 1976, 1979; Carter 1978; Carter and Mamani 1978; Vitti 1979; Duke, Aulik and Plowman 1975; Fuchs 1978; Bastien 1979.

⁴Ritual offices or charges that are rotated annually among community members.

Bibliography

- Alberti, G. and E. Mayer, eds.
1974 Reciprocidad e Intercambio en los Andes Peruanos. *Perú Problema* 12. Lima: Instituto de Estudios Peruanos.
- Allen, C. J.
1982 Body and Soul in Quechua Thought. *Journal of Latin American Lore*, 8(2):179-196.
- Bastien, J.
1981 Metaphorical Relations Between Sickness, Society and Land in Qollahuaya Ritual. In J. W. Bastien and John M. Donahue, eds. *Health in the Andes*. Washington, DC: American Anthropological Association.
- Bolton, R.
1976 Andean Coca Chewing: A Metabolic Perspective. *American Anthropologist*, 78:630-633.
1979 On Coca Chewing and High Altitude Stress. *Current Anthropology*, 20:418-420.
- Burchard, R.
1975 Coca Chewing: A New Perspective. In V. Rubin, ed. *Cannabis and Culture*. Chicago: Aldine. pp. 463-484.
1978 Coca Leaf, Food, Work and Peasant Health in the Andes. Manuscript, Department of Anthropology, University of Manitoba.
1979 Recent Anthropological Research on the Metabolic Effects of Coca Use in the Andes. Manuscript, Department of Anthropology, University of Manitoba.
- Carter, W. E.
1978 *Traditional Use of Coca Leaf in Bolivia*. La Paz: Museo Nacional de Etnología y Folklore.
- Carter, W. E. and M. P. Mamani
1978 Patrones del Uso de la Coca en Bolivia. *América Indígena*, 38:905-938.
- Douglas, M.
1973 *Natural Symbols: Explorations in Cosmology*. New York: Random House.
- Duke, J. A., D. Aulik and T. Plowman
1975 Nutritional Value of Coca. *Botanical Museum Leaflets* (Harvard University), 24(8):113-119.
- Fuchs, A.
1978 Coca Chewing and High Altitude Stress: Possible Effects of Coca Alkaloids on Erythropoiesis. *Current Anthropology*, 19:277-291.

- Grinspoon, L. and J. B. Bakalar
 1976 *Cocaine: A Drug and Its Social Evolution*. New York: Basic Books.
- Gutierrez Noriega, C.
 1949 El Hábito de la Coca en Perú. *América Indígena*, 9(2):143-182.
- Hanna, J. M.
 1971a Further Studies on the Effects of Coca Chewing on Exercise. *Human Biology*, 43:200-209.
 1971b Responses of Quechua Indians to Coca Ingestion During Cold Exposure. *American Journal of Physical Anthropology*, 34:273-278.
 1974 Coca Leaf Use in Southern Peru: Some Biological Aspects. *American Anthropologist*, 76:281-295.
- Isbell, B. J.
 1978 *To Defend Ourselves: Ecology and Ritual in an Andean Village*. Austin: University of Texas.
- Maver, E.
 1975 Reciprocity, Self-Sufficiency and Market Relations in a Contemporary Community in the Central Andes of Peru. *Latin American Studies Dissertation Series No. 72*. Ithaca: Cornell University.
 1978 El Uso Social de la Coca en el Mundo Andino: Contribución a un Debate y Toma de Posición. *América Indígena*, 38(4):849.
- Mayer, E. and E. Masferrer
 1979 La Población Indígena de América en 1978. *América Indígena*, 39(2):211-338.
- Nuñez del Prado Bejar, D.
 1972 La Reciprocidad Como Ethos de la Cultura Quechua. *Allpanchis Phuturinga*, 4:135-165.
- Picon-Reategui, E.
 1968 The Effect of Coca Chewing on Metabolic Balance in Peruvian High Altitude Natives. *Occasional Papers in Anthropology*, 1:556-563. University Park: Pennsylvania State University.
- UNESCO
 1950 Report of the Commission of Enquiry on the Coca Leaf: Economic and Social Council Official Reports, 12th Session, Special Supplement No.1. Lake Success, NY: United Nations.
- Urton, G. D.
 1981 *At the Crossroads of the Earth and the Sky: An Andean Cosmology*. Austin: University of Texas.
- Vitti, T.
 1979 Recent Biochemical Research on Coca Alkaloid: Metabolic Implications. Manuscript, Department of Pharmacy, University of Manitoba.

NOTES ON PRE-COLUMBIAN CULTIVATION OF COCA LEAF

John Murra

It is still quite widely thought that coca leaf in pre-Columbian times was a special, politically unique monopoly of the royal group. However, there is no evidence whatsoever to substantiate this widely held belief. In fact, contrary evidence from investigations seven years and about 35 years following the European invasion of the Andes, indicates otherwise.

Indeed, there is an interesting continuity to the foreign efforts to eradicate cultivation of the coca leaf in the Andes, efforts which have continued since the first serious campaign soon after the European invasion. Everybody on both sides of the debate about the eradication of coca plants agreed that the leaf was deleterious. The question was, could the Andean economy afford to stop coca cultivation and exchange, and particularly its consumption at the mines in Potosí? Potosí at that time was the largest city in the New World, and was larger than most cities in Europe as well. Supplying the miners with coca leaf to make it possible for them to continue mining was a major issue.¹

Coca, which was sold to the miners, became highly commercialized. Because so many people — middlemen, wholesalers and local traders — were involved, and such large fortunes were made in the cultivation of the coca leaf, it is instructive to compare the data from the pre-Conquest period to the debate today. Well-meaning people who thought that the pre-Conquest Andean system should serve as the model for what the Europeans were doing in the Andes, were opposed to the cultivation and the use of coca leaf. European assumptions about the nature of the pre-Conquest pattern of production, exchange and consumption of coca were therefore crucial to the conquerors' policy decisions.

Why, then, there is such an obsession to relegate the leaf as a high status sumptuary activity for the royalty in pre-Columbian times and not as an ordinary matter accessible to the peasant — as it is today — can only be speculated.

Among modern students of this issue there is a tendency to take the leaf out of the category of ordinary activities in which both peasants and lords were interested, and in which both invested much effort and land. It is true that coca leaf did not occupy a sumptuary role in Andean life in pre-Columbian times. But, in much the same way as maize was never a staple in the Andes, the sumptuary role of coca leaf needs to be located in the proper economic framework. Sumptuary is used here not to suggest a superfluous article whose restricted consumption confirms the high status of the user, but rather to designate a non-staple, a specialized article brought in from

outside. Coca leaf is part of a whole series of special, warm-weather crops considered indispensable by the people living under high altitude conditions (see Allen this volume). Not only coca leaf was imported from regions of 3,600 m to 4,000 m elevation, but also maize, hot peppers and many other crops grown at lower elevations.

Some mechanism was necessary in order to obtain these lowland crops which are indispensable in the highlands, but which cannot be produced locally. Of course barter or trade or some other form of exchange could secure these specialty crops. The fact is that the Andean solution was quite different, forming a pattern in which the land at the disposal of a specific social unit was widely dispersed – anywhere from four to 12 days' walk away – and the group's own people cultivated it on their behalf. Coca leaf, then, fit into this wider category of products produced, exchanged and consumed in the vertical "archipelago" of ecological zones so essential to the Andean economic system. This fact helps us understand coca's role in pre-Columbian times and, I believe, today.

The predominant notion of the special, extraordinary role of coca leaf cultivation notwithstanding, the tendency in recent research goes quite another way. Many argue that all these sumptuary crops were unimportant in the basic economic organization of Andean societies. It is frequently true that their cultivation involved few people, particularly since the places where coca leaf is grown are also the appropriate places for maize and hot peppers. Often the gardens planted for coca leaf produced many other items, including fruit. Three, four or even five ethnic groups from the highlands would share one of these garden areas. This raises the question of how to reduce competitive tensions and prevent continuous battles for hegemony of such an area. This is one of the many problems in Andean social and political organization which deserves much more research than it has received.

Thus to study coca leaf we should see it in this broader context of warm-weather crops, routinely available to highlanders who did not rely on a government monopoly or on an itinerant trader. They made sure they had access to this particular, extraordinary wonderful leaf.

A tradition seems to have built up, particularly in the secondary literature, perpetuating the notion that not only was coca leaf a sumptuary good, but that it was somehow a monopoly of the ruling group in Cuzco. It has been common to assert that the average person had no access to the leaf, did not cultivate the leaf and had not incorporated the leaf into his or her social, political, religious or other organizations.

The contrary evidence demonstrated by descriptions of an investigation (de Zuñiga, 1967) made about 1539, only seven years after the Europeans gained control of the Pillkumayu Valley, seems to me quite clear-cut. Because this area is one of the few places of successful Andean resistance to the Europeans, one can assume that in seven years no drastic changes had occurred. The whole Andean superstructure collapsed easily, yet here and there pockets of resistance lasted for five to eight years, and in the

Pillkumaya Valley for 10 years. In fact, these people remained undefeated as long as they fought just the Europeans. Only when the Wanca, traditional enemies of the Inca state, allied with the European invaders did the resistance in the Pillkumayu Valley succumb.

The investigation, which consisted of a town-by-town survey, provides a valuable context for understanding the status of the coca leaf in pre-Columbian times. Timber, hot peppers, honey, feathers and coca leaf are all produced in the same area and at the same elevation, and they all are part of a complex of lowland produce. The honey and feathers are wild, but all the other products are cultivated. The sources available to us, developed to determine levels and types of revenues from the area, are based on *quipu*, knotted cords Andean peoples use to keep statistical and historical records. These records make clear that even seven years after the European invasion, every highland village had its own administrators and cultivators, people responsible for producing or extracting a range of tropical products, from timber to coca leaf, for the villages at higher altitudes. The group in the Pillkumaya Valley was a small ethnic group, comprising just a few thousand people. Even though the lords of such small groups lacked power and importance, each of them had his own timber cultivator, his own coca leaf producer and his own honey gatherer.

Such sources as these town surveys provide clear evidence that the coca leaf, as well as other sumptuary goods, were not monopolies of a restricted elite group or of an overarching state organization prior to the European invaders, even though it may have been that people of higher status had more access to these sumptuary goods. But the fact is that all of these goods were part of the normal peasant repertoire in the Andes.

Elsewhere, where the polities were much larger, coca leaf gardens could be located much further away — eight, even 10 or 12 days' walk away. A group could keep permanent cultivators at distant lowland sites, to mind their particular terraces and to bring back coca leaf, which can be harvested several times a year, on special occasions a few times a year. The Europeans were interested in this practice because it affected, of course, the trade and the benefits of the trade to Potosí. Local witnesses consistently stated that there are two crops a year which are reasonably good, unless the year has been bad. The third *mit'a*² in August, is very weak. It produces little, and only rarely, say informants, can they contribute, "what is expected of us."

Further evidence comes from another documentary source (Archivo General de Indias 1568) that offers a description of conditions in a small area, called Songo (one of many places of that name in the Andes), about 35 years after the European invasion in 1568 and 1569, and around 26 years following the inspection of the Pillkumayu Valley. We should take into account this difference in time: a particularly long period in terms of changes expected since this coca leaf-producing area was tied tightly and directly into the mining activities in Potosí early on. Thirty-three years after the invasion, perhaps 90 percent of the increase in coca leaf production was directed to the population newly concentrated in Potosí. Neither the use of coca in

that way nor the large population was a traditional circumstance or condition.

These descriptions of conditions in Songo provide one important piece of information which, again, points to the significance of coca leaf not only at the state level, but also at the local peasant village and household level. The report refers to the many people in the area as *yana*, the Andean social category still poorly understood but generally considered to include people who had lost their membership in an ancestral community and were attached in some way as servants or retainers to members of the community where they currently resided. The report notes that every single one of the *yana* had access not just to food but to coca leaf fields as well. Judging by the productivity reported, the fields were not large, but the document verifies that the *yana* had systematic access to them. *Yana* status is vague, and even today we know little about it, but this new evidence that the *yana* had access to coca supplies reinforces my point that the idea of coca as the monopoly of the elite few cannot be sustained.

On the one hand we are constantly awed by the great continuities that exist in the Andes between pre-European conditions, values and ways of thinking, and present-day ways of thinking, acting and believing. On the other hand, it is important to remember how long European colonial rule has continued — now four and a half centuries — and how profound the changes were, even in the first 50 years, so far as the Andean peoples were concerned. The production and consumption of coca leaf is one of the areas where underlying continuities can be traced for Andean people, along with the undeniable transformations and arrogation of the product for the purposes of the European invaders in the period following the conquest, when the mining core of the colonial system was implanted.

Notes

¹Chewing coca leaf reduces perceptions of hunger and fatigue, therefore making it possible for miners to work long hours at high altitudes even without adequate food. — Ed.

²*Mita* is a fundamental concept in the Andes. I insist on the glottal stop because the colonial administration took over not the word alone, but the institution in organizing silver mining in Potosí and elsewhere. Putting in the glottal stop is one way of signaling that you are talking about things before the European invasion. If you drop the glottal stop, in the Spanish way, people will know you are talking about the Spanish times. Thus, *mita* normally refers to obligatory labor service provided to the state.

Bibliography

Archivo General de Indias

1568 *Visita de Songo, Challana y Chacapa*. Justicia n. 651 (2 Vols in 1), Seville, Spain.

de Zuñiga, I. O.

1967 In J. Murra, ed. *Visita de la Provincia de León de Huánuco*, Vol. 1. Huánu, Peru: Universidad Nacional Hermilio Valdizán.

COCA PRODUCTION IN THE BOLIVIAN YUNGAS IN THE COLONIAL AND EARLY NATIONAL PERIODS

Herbert S. Klein

The Yungas valleys were Bolivia's primary zone of coca leaf production from the pre-Columbian period until the second half of the twentieth century. These semi-tropical intramontane valleys lying to the east of the city of La Paz were thus one of the world's most important centers of coca production. Despite their importance, surprisingly little scholarly attention has been paid to the Yungas valleys and their unusual agricultural economy. This essay provides an initial assessment of the organization of this economy and its evolution over time, from the arrival of the Spaniards until the contemporary period. I have centered this analysis on estimating the changing volume of coca production and describing the structural changes in production and in ownership of the *cocales* (coca fields) in the course of these four centuries.

Growing coca in the highlands of the southern Andes dates from the earliest times of recorded history. Under the Incas, the eastern cordillera escarpment tropical valleys now known as the Yungas were already major producers of coca leaf for consumption on the high plateau. The valley of Zongo, which was part of this intramontane valley system, was estimated to be exporting 5,000 *cestos* (baskets) of coca leaf annually in the pre-Conquest period (see Murra this volume).

When the Spanish entered the region, coca leaf production experienced a major period of growth. The Indian communities or *ayllus* of this district initially responded to increases in both traditional and new types of Indian consumption in the post-Conquest period. This increased demand resulted from an apparently more widespread consumption of leaf in traditional farming communities of the highland or *Altiplano*, as well as heavy use among the Indian miners whose numbers increased with the growth of a major mining industry in the southern altiplano districts of Potosí. By the end of the sixteenth century, the Potosí district mines had brought some 100,000 Indian laborers to this previously empty region; the newly opened mines of Oruro added approximately another 30,000. So vital was this consumption that coca leaf often served in place of money wages and was the most highly commercialized Indian product in the colonial Andean world, sometimes serving as money in even Spanish commercial exchanges.

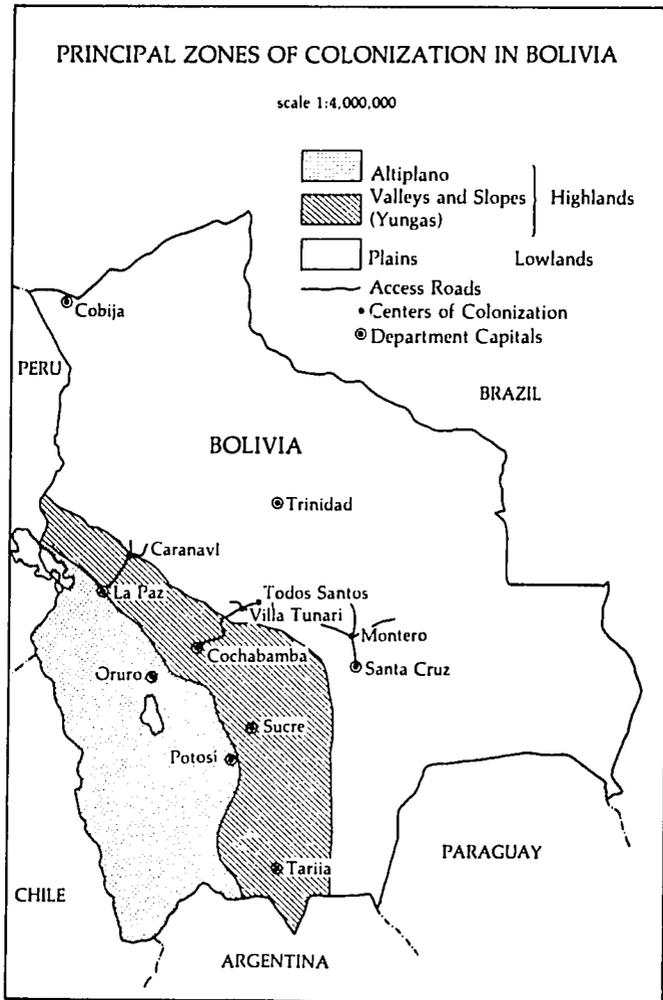
The Spaniards initially allowed Yungas coca production to remain in the Indians' hands. The *cocales* were worked by the *ayllus* who retained ownership of the land and remained free laborers, but their output was taxed and the resulting production was assigned to individual Spaniards who held

these communities in *encomiendas*.¹ In the 1540s, the tribute tax taken from all the Yungas communities amounted to some 5,300 cestos of coca per annum (Carter et al. 1980). These cestos were tightly compressed packages of coca leaves held together by banana leaves. In the colonial period such cestos weighed approximately 8-10 kg (18-22 Spanish colonial pounds) per basket. In the nineteenth and twentieth centuries they increased slightly to an average of 13.8 kg (30 Spanish pounds) per basket (Parkerson n.d.). In the 1560s, three valleys of the Yungas region, including Zongo and Suri, were assigned to a resident of the city of La Paz whose tax on local production came to some 3,000 cestos of coca per annum, or 1,000 per harvest (Romano and Tranchand 1983:58). Total Yungas tribute in this same period remained at some 5,300 cestos of coca (Carter et al. 1980).

This stable output in the sixteenth century, at least as measured by taxation, probably did not continue into the next century. A combination of factors must have reduced consumption and thus reduced production as well. The impact of European diseases had a profound impact on the total Amerindian population of the Andes, decreasing it by anywhere from a half to two-thirds its size in pre-Conquest times. A series of epidemics struck the rural populations in the late sixteenth and early seventeenth centuries, and the resulting declines did not stop until the end of the seventeenth century. At the same time, the mining industry after the 1650s went into a major depression and production and the number of miners employed fell dramatically. Since a third to a half of Yungas production in the middle of the seventeenth century went to the mining camps of Potosí and Oruro, this decline must have affected the coca export from the Yungas.

These negative factors help explain why the Spaniards were relatively slow to penetrate the Yungas and become coca producers themselves, and why full exploitation of the valley lands was still far from achieved in this early colonial period. The serious threat of raids as late as the end of the seventeenth century by hostile and unconquered eastern lowland hunting and gathering Indians, known generically as Chiriguano, also kept the Spanish out of the more distant valleys. Although some Spaniards were producing coca on Yungas estates from the very earliest period, production in the first two centuries following the Spanish conquest was still dominated by Indian producers, either local ayllus, colonists from altiplano ayllus or local Indian nobles (*kurakas*). Production was also still confined to the largest and more accessible of the Yungas valleys.

The increasing wealth of the La Paz district, in which the Yungas as well as the highland grazing and farming regions were included, however, soon brought a new interest on the part of the local Spaniards in the coca industry. From the wealth generated by their control over the production of the rich Aymara communities of the Altiplano, the Spaniards developed a major urban center in the previously unsettled valley in which the new city of La Paz was located. By the early eighteenth century, La Paz became the prominent city of the region, outdistancing both Oruro and Potosí in population.



The new urban *cholo* (mestizo) and Indian populations, as well as the older farming ayllus on the Altiplano, were heavy coca leaf consumers. In addition, mining production began to grow again as the century-long economic crisis came to an end in the middle of the eighteenth century. Growth in demand was also greatly influenced by the demographic transition that the local Indian population experienced around 1700. After almost two centuries of decline due to the impact of European diseases, the Aymara and Quechua populations of the southern highlands finally began to achieve positive growth rates in the eighteenth century, and the rural Indian populations would continue to grow at rather impressive rates well into the twentieth century.

It was this increasing demand, combined with the new availability of capital due to the eighteenth century revival in mining, which allowed Spanish merchants and officials to purchase undeveloped lands in the

Yungas and cultivate coca leaf themselves. Establishing new cocalas was a highly costly business. While the undeveloped land was relatively cheap, clearing and planting coca bushes was an expensive process. It required constructing stone-supported terraces (*huachus*) on the virgin mountainsides — since there was little bottom-land for development in these valleys — and planting and caring for local bushes until they came into full-scale production after several years. Terracing the mountainside was so costly an operation, even with the low wages the *hacendados* (hacienda owners) paid, that the original haciendas were often jointly owned affairs. Several Spaniards pooled their resources to own a given mountainside and then one or more of them would develop the small sections of terraces to plant the coca bushes. Only as production began to get underway could these early producers expand and finally take over full control of the hacienda. Thereafter, terracing and planting costs were paid for with coca exports. Good cocalas with well-tended plants could come into full production within three to six years and could continue to produce for up to 40 years. Thus the comparative costs between virgin and fully planted lands with mature bushes was enormous, and the resulting enterprises proved to be the highest-valued haciendas in the Southern Andean world. The leading coca planter in the late eighteenth century, Don Tadeo Diez de Medina, a merchant of La Paz, is a typical case. In 1756, he had acquired part of the lands of the hacienda called Chicalulu in the Yungas district of Pacallo for 4,800 pesos and 8 reals.² This was virgin land with no cocalas on it. By 1773, with the income from these newly established fields, he was able to acquire the other half of the estate for another 5,000 pesos. By the 1780s, the estate was producing an impressive 1,500 cestos of coca per annum with a large labor force of 184 Indians and was now worth 65,000 pesos. A second estate, which he had in Coroico, which was also producing around 1,500 cestos per annum in the 1780s, was now worth 90,000 pesos (Klein 1983).

Given the high cost of entrance and the vagaries of local farming conditions, most of the Spanish *hacendados* did not reside locally; usually absentee landlords, they also owned non-coca holdings outside the valleys. The *hacendados* appointed *mayordomos* or stewards to run their estates and continued to earn most of their income from their mercantile or governmental activities in La Paz. They also invested in grazing activities, orchards and in food-producing haciendas (*panllevar*) in the highland areas. Thus, much like the pre-Columbian ayllus, the *hacendados* of the eighteenth century tended to spread their investments and their risks through a policy of multi-ecological exploitation in which the Yungas coca estates were just one of their many activities.

The high costs of establishing cocalas and the high profits coca generated also guaranteed that there would be an unequal control of the haciendas among the Spaniards themselves. Although an average estate contained 55 resident Indian workers in this period, the leading planters (the top 10 percent of all planters) averaged around 200 Indians, and they controlled the majority of the labor force on Spanish estates. The planters with the largest

cocales were those most likely to have estates in other districts, just as the smaller cocales were most likely to be owned by several owners or by resident ones (Klein 1980).

With the growth of these new haciendas, several more valleys were added to the traditional Yungas production zone; by the end of the colonial period almost all of the contemporary north and south Yungas area was fully exploited. When the Chiriguano Indian raids ended, even the most remote valleys could be brought into production. Thus coca reached its natural limits of expansion in the region by the late eighteenth century. From the earliest period, coca was a highly productive crop in the Yungas valleys, where producers obtained three harvests a year. The first and largest of these three occurred in March at the end of the rainy season, the second in June (San Juan) and the last in late October or November (Todos Santos) just before the rainy season. Of the three, March was the most productive and June the least. In 1783, royal officials estimated annual coca leaf production in the Yungas valleys between 250,000 to 300,000 cestos per annum (2-3 million kg) which was then worth 1.7-2.4 million pesos. This amount brought the Yungas coca production up to that of Cuzco, which previously had been Peru's leading coca producer. Together these two regions accounted for some 500,000 cestos of coca per annum (Carter et al. 1980). Yungas coca in the 1780s was produced by some 6,000 male Aymara Indian workers, and this figure remained steady for most of the first half of the next century (Klein 1979).

While annual production figures are difficult to obtain for any period, output in the late eighteenth century and through most of the nineteenth and twentieth centuries probably came close to the 1783 estimate of 250,000-300,000 cestos, though the late nineteenth and twentieth century cestos were probably a kg or two heavier. The only discordant figure is the 1848 estimate of the respected statistician Jose Maria Dalence, who placed Yungas production at a very high level of 442,000 cestos (or 4-5 million kg), of which 98 percent, he claimed, was consumed within the Republic of Bolivia (Dalence 1851:315). Given the relatively stagnant national export economy, the reason why coca production was so high in this period remains unclear. In 1880, a government tax official suggested that annual production was averaging 260,000 cestos per annum from the Yungas, which would suggest a total production of 2.6-3 million kg (Aspiazu 1881:19).

This same relatively narrow range of total Yungas production could be observed in the rest of the nineteenth and through most of the twentieth century. Diverse sources give total figures running from a low of 2.3 to a high of 4.0 million kg in the 1850s to the 1950s period, with the average of some 18 different yearly estimates in the three million-kg range (Carter et al. 1980). This output was still overwhelmingly consumed nationally; production and export figures in the 1920s indicate that only 13 percent of the Yungas coca was exported, and this mostly to the northern sugar fields of Argentina, where it was consumed by migrant Bolivian workers (Morales 1929:157-158). Although the Yungas began exporting coffee, bananas and

citrus fruits in the nineteenth century, coca remained the dominant export, and the Yungas continued as Bolivia's premier coca zone until the late 1960s. In the 1950 agricultural census, for example, the Yungas still accounted for two-thirds of national coca production, despite the growth of Chapare coca plantings (Dirección Nacional de Estadística 1950:78). It was only in the next decade that Chapare production surpassed total Yungas output (Rodrigues 1965:17), and when it did so, total national production began to climb. From the four million-kg range in the previous decades, Bolivia's annual coca crop rose to 15 million kg in the late 1970s. But all this new production came from Chapare, since the Yungas was still harvesting its typical three million kg at this time (Carter et al. 1980).

By the end of the eighteenth century, the relative weight of private and communal production had also been fairly well established and would remain relatively stable until the end of the nineteenth century. In a detailed analysis of the Yungas coca industry Crown officials made in 1796 (see table), local coca production was estimated at 200,000 cestos per annum. Coroico and Coripata were the biggest producers of coca, together accounting for almost half of the region's production. With the addition of Chulumani, the third largest producer and the center of ayllu production, the three leading districts accounted for two-thirds of the annual Yungas harvest.

Some 55 percent of Yungas production came from the 345 haciendas of the valleys, and their production per worker of 40 cestos per annum was twice as high as that from the ayllus, which accounted for only 20 percent of local production. The best lands and the best leaf were hacienda-produced (so labeled in the contemporary commercial documents); so impressive was the haciendas' output that the landless hacienda workers on the estates' usufruct lands were able to produce the remaining 25 percent of the region's total output.

Compared to the haciendas, the 58 ayllus in the Yungas were far less monoculture-oriented. Although coca was their primary cash crop, the ayllus were also heavily committed to food production. Hacendados could afford total concentration on coca planting since they carefully limited their risks by multiple ownership of new estates, a balanced portfolio of non-coca haciendas outside the Yungas and investments in commerce and urban occupations. The majority of the ayllus, however, no longer had access to multiple ecological resources as in pre-Conquest times, especially after the Toldo reforms destroyed most of these long-distance trading relationships. Thus they had no such alternative investment possibilities and could not afford total specialization in coca production. The ayllus also had a far larger number of persons per unit – 184 Indians compared to the 55 Indians per hacienda. The larger resident work force on the ayllus as opposed to the haciendas was probably due to the hacendado's ability to attract larger numbers of seasonal workers for the mita harvest, as contrasted with the poorer ayllus that could not afford to pay for such seasonal labor from the Altiplano. Although both the ayllus and the haciendas paid migrant

COCA PRODUCTION FOR THE MAJOR COCA PRODUCING PUEBLOS OF CHULUMANI IN 1796

Average Output per Worker¹ (in cestos)

<i>Pueblo</i>	<i>Total Production (in cestos)</i>	<i>Percentage Output Produced by Owner on Hacienda</i>	<i>Percentage Output Produced by Yanaconas on Hacienda</i>	<i>Percentage Output Produced by Ayllu</i>	<i>Total Hacienda Output</i>	<i>Total Ayllu Output</i>	<i>Index of Relative Output per Worker between Hacienda and Ayllu (100 Ayllu Output)</i>
Yanachi [11] ²	5,539	40.4%	17.9%	41.7%	39.9	7.8	511
Chupe [10]	6,019	54.2	16.9	28.8	37.3	7.0	532
Chirca [6]	18,499	57.1	28.5	14.3	34.1	11.4	299
Coripata [9]	37,645	64.9	35.1	—	39.5	—	—
Chulumani [1]	26,939	24.7	9.0	66.2	30.2	22.9	132
Ocabaya [5]	8,443	35.0	15.1	49.9	57.9	5.4	1072
Irupana [2]	22,445	43.8	29.8	26.3	72.2	35.8	202
Coroico [8]	59,888	68.9	25.9	5.2	45.9	17.0	270
Pacallo [7]	11,824	68.3	31.7	—	35.7	—	—
Suri [4]	2,183	34.9	0.6	64.5	6.0	22.3	26
Totals	199,424	55.2	25.2	19.6	40.9	18.5	221

Source: AGI, Audiencia de Buenos Aires, legajo 513 *Estado que manifiesta el numero de Haciendas . . . en el Partido de Yungas . . .*, La Paz, 17 May 1796.

¹Workers here refer to *tributarios*. Since the 1796 production list did not contain a census of tributarios, I had to adopt either the number of tributarios from either the 1786 or 1803 census, the only two which bracket the 1796 data. Unfortunately, while the number of ayllus is approximately the same in both census and in the 1796 listing, the same is not the case with the haciendas. There were more haciendas listed (308) in 1796 than in 1786 (263) or 1803 (227). This would imply that using either 1786 or 1803 for obtaining tributario numbers would still be too low compared to 1796. Since the 1786 census lists some 1,290 more tributarios, I have decided to use this census with its 3,915 tributarios on haciendas and 2,112 tributarios on ayllus as my base. A more accurate 1796 tributario listing for the haciendas would obviously raise the number of tributarios and thus lower the output per worker estimates given here. In the case of the ayllu output, the above figures would seem approximately correct for the time.

²The numbers in brackets refer to their place in order in the 1786 census.

workers in coca leaf, it appears that the poorer ayllu leaf and lower ayllu output did not appeal to the highland migrants.

While the Yungas ayllus were less specialized and mixed farming production operations more than the local haciendas, when compared to all other such communities in the Andes they remained in a class by themselves. Because of the relative wealth of their cocales, they paid the highest tribute tax (up to 20 pesos per capita per annum) of any Indians in the viceroyalty of Peru and probably in all of South America. They also had, along with the haciendas, the highest ratio of economically active to total population (60 percent of the total population were between 18 and 50 years of age) of any ayllus in the district of La Paz (Klein 1975).

Labor on the haciendas and the ayllus was in some ways quite similar. On the haciendas, resident Indians were paid in usufruct land that they could use for their own subsistence crops as well as for their own coca bushes. In return, they provided free labor on the hacendados' lands, usually using their own tools. They were also required to give domestic service (*pon-gueaje*) in the mayordomos' and hacendados' houses, as well as provide free transportation to carry the hacienda crop to market. These landless resident Indians were generally called *yanaconas*, after the pre-colonial term used to designate non-ayllu Indians. Whereas this term implied landless workers in service activities in the earlier period, it now meant exclusively peons living on Spanish estates. In the more prosperous zones, yanaconas sometimes used their lands to attract poorer laborers who aided them in their work obligations on the hacendados' lands.

Almost all yanaconas were Aymara-speaking Indians who came from local ayllus or from those on the highlands. In the colonial and early national period there were also several hundred African slaves employed in some of the cocales, though local planters finally concluded that the more abundant Indian labor was cheaper (Crespo 1977:109-110, 114ff). The 1786 census of tributary Indians listed 21,000 Indians as Yungas residents; 14,000 of them were yanaconas living on the Spanish estates. The remaining 7,000 Indians were living on the ayllus where work patterns were not that dissimilar to the haciendas'. The communities were divided between 3,000 *originarios* and 4,000 *agregados*. The *originarios* were primary residents on the ayllus, who had complete land rights in the community and also were subject to tribute taxation by the state. The *agregados*, or *forasteros*, were considered to be landless Indians who settled in these ayllus and provided free labor on the lands of the *originarios* in return for usufruct rights on communal property to grow their own crops.

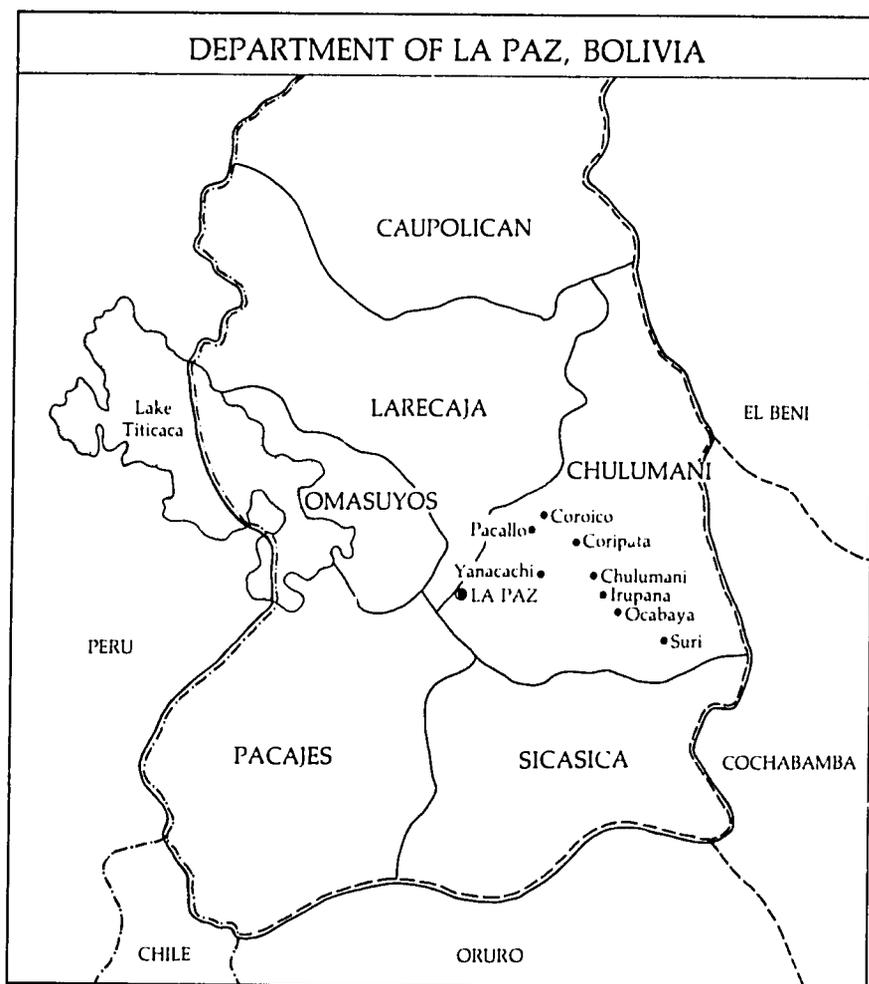
The commercialization of the Yungas coca crop was a complex affair. The bulk of the best hacienda-produced leaf was sold by the hacendados themselves, many of whom were already leading merchants in La Paz. But the leaf the yanaconas produced on the haciendas and the ayllu-produced leaf was in the hands of cholo itinerant merchants called *piqueros*. Finally the seasonal laborers themselves were paid in coca leaves, which they then brought back to the Altiplano. There they sold their earnings either by

themselves in the Altiplano markets, or through the piqueros (Santamaria n.d.). Because of the heavy taxation on coca, one of the few Indian products which was charged the colonial sales tax (*alcabala*), the relative importance of legal and illegal production was considerably debated. Typical of such dual market systems, it is difficult to measure what percentage of total output was handled in contraband trade and what effect this trade had on total production estimates.

The growth of silver mining in the post-1850 period generated boom conditions in Bolivian farming activity everywhere. By the 1880s, urban whites and cholos had enough available capital to engage in a massive seizure of Indian lands on the Altiplano. The result is what historians have come to designate as a second great age of hacienda expansion in Bolivian history. From 1880 to 1930, the ayllus' control of half the lands and over half the labor force decreased to less than a third of both. Most of this growth of haciendas occurred in the Altiplano and non-Yungas zones, largely because of the low cost of entry. Since most of the lands the hacendados seized by force and fraud were already in production, capital investment was minimal and returns were both high and immediate.

Because capital was diverted to other zones, the capital needed for the expensive maintenance and expansion of the Yungas cocaleras became less available, and there appears to have been a temporary crisis in production in the last quarter of the nineteenth century (Aspiazu 1881:19ff). Local producers responded to this crisis by experimenting with new ownership arrangements. From 1880 to 1940, a few joint stock companies with paid professional managers who owned cocaleras emerged. These agricultural companies sold their stock on the national capital market and thus spread the costs over a wide network of owners (see e.g., Rene Moreno 1886 and 1887). But the majority of estates remained in the hands of individual proprietors who typically came from the La Paz elite.

What differentiates the Yungas, even more than its experimentation with agricultural companies, was the survival of the larger ayllu, especially in the traditional area of Chulumani and the surrounding cantons of the Sud Yungas region. Whereas the hacienda revolution had broken the power of the ayllu in the rest of the Altiplano region, the south Yungas province (with the cantons of Chulumani, Tajma, Chirca, Chupe, Yanacachi and Ocabaya and the second cantons of Irupana, Lasa and Lambete) were still ayllu strongholds in the 1920s. The 31 ayllus of this area, with their 1,338 male tributaries (known as *contribuyentes* in the post-1880 period), were almost as wealthy in terms of the estimated market value of their lands as the 137 haciendas with their 1,751 male *colonos* (or *yanaconas*). In the north Yungas area (which consisted of the cantons of Coroico, Pacallo, Mururata, Coripata, Milluhuaya and Arapata), where the haciendas had taken much of the ayllus' land and labor in the eighteenth century, only a few ayllus remained by the 1920s and the value of their lands was insignificant compared to the 129 haciendas and their 3,162 colonos (Morales 1929:105ff).



Equally impressive is the extreme stability of the labor force between the censuses of the early nineteenth century and that of the late 1920s. Average number of workers per estate was similar in relative distribution between ayllu and hacienda workers and was approximately the same over this century or more of change in the rest of rural Bolivia (Klein 1979:323-324).

This lack of substantial change in control over lands did not mean that the hacendados did not remain the dominant coca-producing group. They had achieved their power in the late eighteenth century, but were never challenged as the primary producers of commercial grade coca. Their leadership was even given legal status as early as 1830, when the Santa Cruz government officially recognized a Junta de Propiedades de Yungas, the Society of Yungas Proprietors (SPY), to speak for the group, collect special taxes on coca exports and build and maintain the road network. From the 1860s and 1870s, until the 1950s, this junta was the voice of the coca hacendados. SPY not only became a vocal pressure group at the national level,

and a major public works company in road building, but it also supported railroad construction, streetcar works in the major Yungas cities and regional electrification. It was, in fact, a government within a government, and controlled local politics as well (Morales 1979:198ff).

Thus the Yungas and its coca industry stand out as an anomaly within the general evolution of rural Bolivian society. An old ayllu production center in the pre-Conquest period, it was only expanded in the eighteenth century. Once the hacienda expansion occurred, however, there was a marked stability in output, size of labor force and even in the distribution of control over production between haciendas and ayllus from the late eighteenth century until the middle of the twentieth century. Despite the profound changes occurring elsewhere, long-term stability was the order of the day in the Yungas. This obviously had a great deal to do with the inelastic demand for coca among Bolivian consumers and the special ecological environment in which coca was produced. It may also have been the result of the rather aggressive and unusual nature of the Aymara communities in the Yungas valleys, and their ability to adopt to the highly commercial nature of the local market economy.

Whatever the importance and survival of the ayllus, however, there is little question that the haciendas dominated commercial production of coca from the eighteenth century to the agrarian reform of 1953; it was this continued hacienda control that distinguished the Yungas coca industry from all other coca producing zones in modern Bolivia. When the Chapare came into major production in the 1960s, it would be defined to a large extent by small-scale production and cholo and Amerindian ownership (see Healy this volume).

Notes

¹A formal, royal grant that entrusted Indian families, usually the inhabitants of a town or cluster of towns, to certain Spanish colonists. The first encomienda holders were permitted to exact both commodity tribute and labor service from the Indians.

²One peso is equivalent to approximately one US dollar. A real, the eighth part of a peso, is a former silver coin of Spain and Spanish America.

Bibliography

- Aspiazu, A.
1881 *Informe que presenta al . . . Hacienda el Director General de Contribuciones Directas del Departamento de La Paz*. La Paz.
- Carter, W., M. Mamani P., J. V. Morales and P. Parkerson
1980 *Coca en Bolivia*. La Paz: US National Institute of Drug Abuse.
- Crespo, A.
1977 *Esclavos Negros en Bolivia*. La Paz.
- Dalence, J. M.
1851 *Bosquejo Estadístico de Bolivia*. La Paz.
- Dirección Nacional de Estadística (Bolivia)
1950 *Censo Agropecuario 1950*.

- Klein, H. S.
- 1975 Hacienda and Free Community in 18th Century Alto Peru: A Demographic Study of the Aymara Population of the Districts of Chulumani and Pacajes in 1786. *Journal of Latin American Studies*, 7:2, November.
 - 1979 The Impact of the Crisis in 19th Century Mining on Regional Economies: The Example of the Bolivian Yungas. In David J. Robinson, ed., *Social Fabric and Spatial Structure in Colonial Latin America*. Syracuse: Syracuse University Department of Geography. pp. 315-338.
 - 1980 The Structure of the Hacienda Class in Late 18th Century Alto Peru. *Hispanic American Historical Review*, 60:2, May.
 - 1983 Accumulación y Herencia en la Élite Terrateniente del Alto Perú. *Historica*, 7:2, December.
- Morales, J. A.
- 1929 *Monografía de las Provincias de Nor y Sud Yungas*. La Paz.
- Parkerson, P. T.
- n.d. The Role of Coca in the Economy of Bolivia, 1535-1952. Unpublished ms.
- Rene Moreno, G.
- 1886 *Primer memoria anual . . . de la Empresa Agrícola Coriguaico . . .* La Paz.
 - 1887 *Segundo memoria anual . . . de la Empresa Agrícola Coriguaico . . .* La Paz.
- Romano, R. and G. Tranchand
- 1983 Una economía coquera en los Yungas de La Paz, 1560-1566. *HISLA. Revista Latinoamericana de Historia Económica y Social*, 1:1.
- Rodriguez, A. A.
- 1965 Possibilities of Crop Substitution for the Coca Bush in Bolivia. *Bulletin on Narcotics*, XVIII:3, July-September. UN: Department of Economic and Social Affairs, Division of Narcotic Drugs.
- Santamaria, D. J.
- n.d. Producción y Comercio de Coca en el Alto Perú (1783-1810). Unpublished ms.

THE INTERNATIONAL NARCOTICS CONTROL SYSTEM: COCA AND COCAINE

John T. Cusack

We are in a period of transition in man's 76-year effort to control narcotic substances; today we can add the psychotropic substances. You heard yesterday that these materials existed 4,000 years ago or more. I think in general people accept without question that existence of the opium poppy, the coca leaf and the cannabis plant can be documented back 4,000 years. What is interesting is that with little or no exception, for thousands of those years, these plants and their usage remained where and as they originated. Then around the year 900 AD, we find that the opium poppy and the cannabis plant began to be carried to other parts of the world; traders began moving opium from its origin in Asia Minor into far reaches of South Asia all the way into China, and the cannabis plant was moved into Egypt and Africa and all the way around the rim of Africa as far as Morocco. Curiously, the coca plant was the most "unadventurous." For the most part, it remained in the Andean region that later would include parts of Colombia, Ecuador, Peru and Bolivia.

We also find that up until about the year 900, opium and cannabis were used predominantly for medicinal purposes by Arab medicine people who were the first to devise the scientific application of opium and its potions to treat illness and pain. Use of opium and cannabis was usually controlled by the tribal leadership, and evidence indicates that they were ingested. Ingestion of opium and cannabis creates a less euphoric reaction than if they are taken in other forms. Smoking these substances, for example, enables more of the alkaloids to be extracted. The first form of taking opium and cannabis for their euphoric effects was smoking, which began around 900. Once opium was smoked, it was "Katie bar the door." That's when serious opium addiction began.

Abusive smoking of opium and its use in primitive medical practices continued on the Asian continent up until the age of discovery, which began about 1450. Then something else happened. With ships and navigators, for the first time, people and trade began to cross the oceans and move to other continents. Of the narcotic substances, it was again primarily opium that reached the other continents, where it continued to be abusively smoked and used in rather primitive medical practices. This movement of people, trade and narcotic substances to the other continents was a slow, gradual development. We know that early in the nineteenth century morphine was extracted from opium; that around the 1850s, the hypodermic needle was developed; that cocaine was discovered shortly thereafter; and heroin

shortly after that. By the year 1900, we had three excellent alkaloids for medical purposes: morphine, heroin, cocaine. Medical science did not quite understand at that time, however, these substances' side effects. The principal side effect was addiction. But it wasn't quite understood for what it was. Throughout the world, these narcotic substances were overprescribed medically and used extensively for pleasure, resulting in widespread addiction.

Meanwhile, particularly in Asia, from the Asia Minor coast of the Mediterranean and the Aegean, all the way to the North China Sea, opium was widely produced, trafficked, used medically and greatly abused primarily by smoking it. Opium smoking was the scourge of those areas. Millions were addicted to it. And, I think, history fairly well establishes that it constrained the development of those areas.

Cocaine, heroin and morphine, by the year 1900, were also widely abused in most European cities, in most North American cities, in many of the larger Latin American cities, throughout the Far East and throughout even countries as far away as Australia. All of these substances were manufactured legally in pharmaceutical factories.

By about 1900, medical science, educators and government leaders began to recognize the public health liabilities of these products when not used for medical purposes. Indeed, they concluded that cocaine, heroin and morphine are different from alcohol and should be controlled and limited to medical purposes. These drugs' toxicity and rapid dependence-producing liability make them quite different from alcohol; in effect these substances have no use other than for medical purposes under the supervision of a trained physician.

There is always something that motivates the action that people have been talking about taking; in this case, it was the situation in the Far East. It involved bitter political controversy over the traffic in opium by the British East India Company into China, where thousands of tons of opium annually were moved from India into China. Beginning at the end of the eighteenth century, it flourished throughout the nineteenth century and into the twentieth century. And as you probably know, two opium wars were fought over this issue. The British prevailed in both and maintained their treaty rights to move this substance into China.

At any rate, the twentieth century was dawning, and I think the world was a little more enlightened. A conference was called together at Shanghai in 1909 to deal with the opium situation and the practice of opium smoking, and at that conference several recommendations were made. The basic recommendation was that opium and its derivatives, morphine and heroin, should be brought under control and their use should be limited to medical and scientific purposes. The delegates went back to their countries where the medical, scientific, educational, religious and government leaders receptively received the delegates' recommendations. There was a broad consensus that opium and its derivatives should be controlled. The leaders asked, "How do we do this?" The experts answered, "It's quite simple, prepare a

treaty. You gather the governments together, you write up a document that states what needs to be done, and you do it." So the experts met in The Hague in 1911, and by 1912, they completed the treaty, called The Hague Opium Convention of 1912. The treaty called for bringing under control opium and its derivatives, and cocaine. In their deliberations in Shanghai back in 1909, the experts had felt control of these substances required international cooperation, because even in those days the raw materials and the finished products, the manufactured narcotic drugs, were produced in a handful of countries. In other words, a handful of countries were producing the coca leaf, the opium poppy and the cannabis plant.

Now here again I should emphasize that the major problem of the time was opium, and, to a certain extent, its derivatives. Morphine and heroin were not as heavily abused in those days as opium, but they would be in time – they were a growing problem, no question of that. Cocaine was also being abused by then and was becoming a serious problem as well. What the experts felt had to be done was that all countries had to agree that first they would control the production of the narcotic crops at the farm levels – license them and limit their production to quantities that would be needed for medical purposes. Secondly, they would limit and control the manufacture of the natural alkaloids – morphine, heroin and cocaine and any other derivatives that might be developed. And thirdly, they would regulate international trade, the movement of these substances, raw materials and finished products between countries. This would have to be done through a system of licenses or import and export permits.

In the early 1900s, one could import morphine from England to the United States or from Germany to England without any form of licensing – it could be traded just like aspirin or any over-the-counter product. The same was true with opium and the coca leaf. As you probably know, the coca leaf was imported by the United States and countries in Western Europe which processed it into cocaine for medical purposes.

When the experts met in The Hague in 1912, they tried to develop an international treaty that would address the three points just mentioned, but failed. So the experts settled for a treaty that required all parties in their own territories, in their own countries, to enact a law that would limit the use of opium and its derivatives, and cocaine solely to medical purposes. After World War I the League of Nations was given a mandate to develop and administer an international narcotics control treaty system. And in 1925, the League successfully developed the Geneva Opium Convention, a treaty that regulated international trade. All raw materials and finished narcotics products had to be licensed in international trade. The treaty was successful to a great extent, but the quantities of narcotics manufactured legally, particularly in Western Europe, were still enormous. They were producing 100 times more cocaine, heroin and morphine than the world needed. The Chinese laborer in Shanghai was using heroin produced in Germany or in Paris. The individual in Mexico City in 1920 was using cocaine that was probably made in Paris. To address this, the experts finally, in

1931, put together a treaty – The Geneva Convention to Limit the Manufacture and Regulate the Distribution of Narcotic Drugs – that limited the manufacture of narcotic drugs by countries to levels approved by an international board which were commensurate with international medical requirements. This was the disarmament, if you will, of the international manufacture of narcotic drugs. Due to the treaty's effectiveness, from roughly 1931 until 1966, the world was not troubled by cocaine problems. Between 1931 and 1965, the amount of cocaine manufactured legally and diverted into the illicit market available decreased world-wide.

During this period many of the factories legally manufacturing the opium derivatives were shut down to meet medical requirement levels. Because drug traffickers who were working with these factories to make huge quantities of narcotics available for the illicit international traffic could no longer obtain their supplies, they set up their own clandestine laboratories. They set up these laboratories in Paris, because Paris was the center of the underworld in Europe in those days; it was a great railroad center and had access to the ports of Marseilles and Le Havre where the raw materials could be transported by ship. It was a simple matter to take 10 kg of opium and smuggle it into France, where in the clandestine laboratory it would make one kg of heroin. Extracting morphine from opium and then converting it to heroin is a simple process; extracting coca paste from the coca leaf is a bulky and more complicated procedure.

The 1925 treaty prevented clandestine criminals from operating in Western Europe. Here traffickers had the skills to import clandestinely the great mass of coca leaf they needed to make one kg of cocaine. In South America, where the coca leaf existed and could be easily converted into cocaine, the underworld skills did not exist. This situation remained static into the 1950s.

In 1936, another treaty was passed that organized a more effective illicit traffic suppression; it required the treaty nations to cooperate with each other in campaigns against illicit traffic and to assist each other in uncovering evidence and exchanging information concerning illicit traffic activity. Between the early 1930s and World War II, officials focused on curtailing illicit traffic and kept it in check. In the United States, between 1931 and 1965, officials never seized more than 10 kg of cocaine in any one year, except one year, 1949, when they seized 13 kg.

World War II ended world-wide just about any form of narcotic traffic because transportation systems including shipping were disrupted. This event is often used to demonstrate the correlation between availability of drugs and drug addiction. You can never have total unavailability, but when you have a lack of drugs, you have a lack of addiction. At the turn of the century in the United States an estimated one million people out of a population of 90 million were addicted to opium, morphine, heroin or cocaine. By 1920, the estimated number of addicted people dropped to 500,000; by 1930 it was 100,000; by 1940 it was 50,000; by 1945, following four years of war, it was under 10,000. The number of heroin addicts

gradually increased to about 100,000 in 1960. Then in 1964, heroin addiction broke into an epidemic which continued until around 1973, when the market from Turkey was cut off. During these years, the number of addicts reached as high as 750,000. Through international action heroin availability and traffic has to a great extent stabilized. It is still a significant problem, however. There are several serious gaps in illicit production in certain countries, but officials are working toward closing them — at least what must be done is understood. The cocaine outbreak, of course, began in the United States around 1965. That year about 16 kg of cocaine were seized. By 1970, we seized slightly over 100 kg. In 1980, we seized our first 1,000-kg quantity. By 1983, we seized over 8,000 kg, and in 1984 about 15,000 kg. In 1980, it is estimated that 25 tons of cocaine came in to the US; by 1984, the estimate was 85 tons. It is thought that about 100 tons will probably come in 1985. Since 1970, the number of heroin addicts in the United States has steadily increased. Estimates now indicate well over 600,000 addicts. Some 20 million people are thought to have tried cocaine, and somewhere between 8 and 12 million people are thought to be fairly regular users of cocaine. Each day in the US, 5,000 people will try cocaine.

While the manufacture and trade of narcotic substances had been brought under control following World War II, international cultivation remained uncontrolled. Prior to 1950, no country was required by any treaty to regulate, license and restrict the narcotics crop in the field. Cocaine was not a problem in 1950, but opium was because of heroin. So in 1953, the international leadership met in New York and established the Opium Protocol. This agreement limited the number of countries which could legally cultivate opium poppies. It also required these countries to license the cultivation, set up a government monopoly for its purchase from farmers, insure that the farmer only grows what he's licensed to grow, and that the number of farmers and the quantity of opium which they authorized them to produce was commensurate with the world's medical needs.

In the mid- to late 1950s, international experts and UN officials decided to codify the 1912 treaty, the 1925, 1931, 1936, 1946 and 1948 agreements (the last had to do with synthetic drugs), and the 1953 Opium Protocol into one treaty, which they called the Single Convention on Narcotic Drugs of 1961. About 100 countries convened in New York for three months to participate in that plenipotentiary conference. In addition to amalgamating all the other treaties, they established the same international system of control the 1953 Opium Protocol required for the opium poppy cultivation, for cultivation of coca leaf and the cannabis plant.

The new treaty went into effect in 1964. At this time, basically only two countries were considered coca producers, Peru and Bolivia. Only Peru was involved in the legal trade. Bolivia didn't export; it didn't have the organization to gather the coca and store, package and market it. There was really no need to do so, however, because Peru produced more coca leaf than could be used legally.

In addition to the requirements previously mentioned, the new treaty

obliged countries where coca leaf chewing was practiced to phase out this practice within 25 years after the treaty's enactment. In other words, the implication was that these countries should take steps immediately to bring that about. The treaty authorized these countries to produce as much coca as they needed for the coca leaf chewers, but also required them to gradually reduce the amount of coca they were producing for chewing.

Referred to as one of the transitional provisions of the treaty, this stipulation was also applied to countries where opium smoking was permitted, and where the quasi-medical eating of opium was permitted under nonmedical supervision. In other words, just as one could buy coca leaf in Peru and Bolivia for chewing, one could buy opium in India and Pakistan for eating. Although most countries prohibited smoking opium following the Hague Convention of 1912, some countries tolerated or permitted it. With the enactment of the new treaty in 1964, they were obliged to phase out opium smoking as soon as possible, and opium eating within 15 years. The last country to do so was Pakistan in 1979 — right at the wire they finally phased out the practice of opium vendors who sold opium for eating.

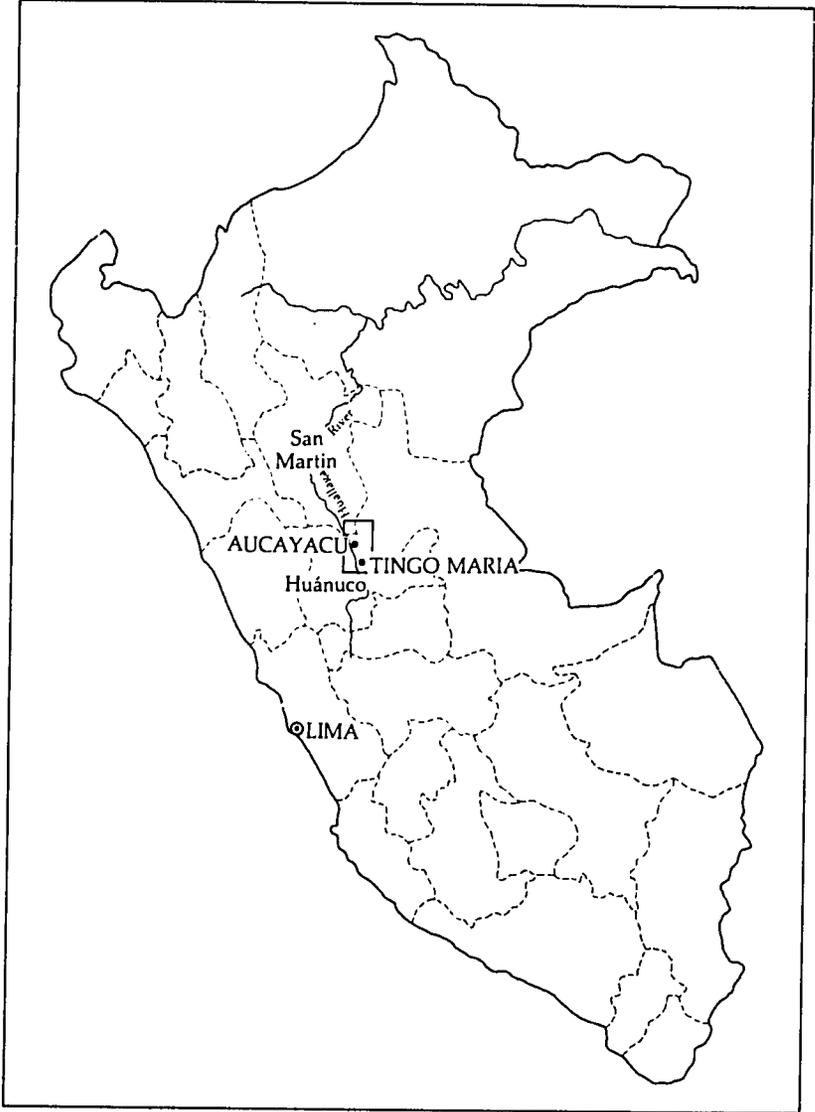
Today, the inability of the governments of Peru and Bolivia to phase out the overproduction of the coca leaf is an enormous problem. From the mid-1960s to the early 1970s, little control activity took place. Some administrative efforts were made but they were never implemented. During this time we see both Bolivia and Peru develop the capability to convert the coca leaf to coca paste and to move it out of the country. By 1976, experts in the field estimated that coca leaf cultivation has increased at a rate as high as 30 percent per year. Some people say it's not that high, but between 10 and 20 percent. Others insist an annual growth rate increase of 20 percent is the best estimate. No one questions, however, that at least there has been a quantum increase in the production of the coca leaf in Peru and Bolivia every year since 1976.

There is some reason to believe, on the basis of countries' reports concerning their needs for coca leaf chewing, that coca leaf chewing is expanding in the area. Another development in the last two to three years is the incredible and devastating spread of *basuco* (coca paste) smoking, particularly among young people, and the enormous proliferation, particularly in Peru, and now also in Bolivia, of the coca paste pits and the clandestine manufacture of coca paste close to the coca leaf-growing areas.

As the two major producers of coca, Peru and Bolivia have failed in their efforts to license and control coca production. They really have not addressed the problem of coca leaf chewing, and it is a problem that is similar to many of the problems in their territory which they are unable or unwilling to address. It's just another problem, people say. Well, they have so many problems that they have to assign priorities; coca is not a high enough priority. These countries' international obligations under the law today are quite simple. They have an obligation to phase out coca chewing and the coca that is being produced for chewing. And secondly, their main obligation to every nation in the world today, particularly the developed nations

that are most severely affected by cocaine, is to bring under control, in their territory, the unlicensed and illicit production of coca leaf.

THE TINGO MARIA-AUCAYACU REGION OF PERU



Yet, despite these protests, the Peruvian government is likely to implement the US' proposal to eradicate the leaf in one part of Peru because in return for eradicating the coca leaf, the US government is offering to help Peru to develop economically the high jungle area where coca leaf cultivation is presently booming. This offer is particularly attractive to Peruvian officials who encourage foreign investment, given Peru's weak and unstable economy in need of external aid.

The Peruvian case illustrates that a complex web of economic, political and social factors operate within Peru, and between Peru and the United States, which must be considered in understanding Peru's response to the US proposal.

THE FOREIGN POLITICS OF COCAINE: COMMENTS ON A PLAN TO ERADICATE THE COCA LEAF IN PERU

David L. Strug

This article consists of two parts. Part I¹ is a discussion and an analysis of an earlier (1979) United States government plan to determine the feasibility of eradicating coca and controlling coca production in Peru, and of substituting coca with other crops.

The analysis presented in Part I is based upon data I collected in 1979 as the anthropologist on a four-person team of consultants whose task was to evaluate for the US government the feasibility of coca eradication and crop substitution in several coca-growing regions in Peru. We were contracted by Multinational Agribusiness Systems Inc., a private firm in Washington, DC, to carry out this investigation. The firm, in turn, had been awarded a contract by the US State Department to do the work.

I returned to Peru in 1981, this time hired directly by the US Agency for International Development (AID), to investigate the potential impact that a coca eradication and crop substitution program might have on peasants who cultivate coca leaves in the Tingo Mariá-Aucayacu region of Peru. I worked on this project with Dr. Cesar Fonseca Martel, an anthropologist from the University of San Marcos in Lima. We gathered data in the Tingo Mariá-Aucayacu region over a six-week field period.

I gave my opinions concerning coca crop substitution and control based on these two field trips in Peru at congressional testimony in Washington, DC, before the Subcommittee on Crime of the Judiciary Committee on May 12, 1983. Sections of that congressional testimony appear in Part II of this article.

PART I

The United States government is currently proposing to the government of Peru the eradication of the coca leaf in that country to help combat narcotics trafficking and cocaine use in the United States. This eradication program would cost the US taxpayer millions of dollars and threaten the well-being of thousands of Peruvian peasants who masticate the leaf or depend on its cultivation for their livelihood; furthermore, it is not likely to achieve its goals.

The proposal contains a number of political disincentives for Peruvian decision makers. Angry peasants who depend on coca leaf cultivation for at least part of their livelihood have already begun to protest initial efforts to curtail coca leaf cultivation, while others have lodged formal protests with Peruvian officials out of fear that the centuries-old traditional use of the coca leaf is threatened. In addition, there are many economically and

The Peruvian case illustrates that a complex web of economic, political and social factors operate within Peru, and between Peru and the United States, which must be considered in understanding Peru's response to the US proposal.

Attacking the Cocaine Problem at Its Roots: The Coca Plant

The last five years have seen United States drug agencies pay increased attention to international aspects of cocaine trafficking. However, while interdiction of larger and larger quantities of drugs and making more arrests, government agencies have evidently been unsuccessful in stopping cocaine from coming to the US in large quantities. Recognizing that police actions alone will not work, the Drug Enforcement Administration and the International Narcotics Matter office of the US State Department have proposed to the government of Peru that it reduce coca leaf cultivation through a program of crop eradication and economic incentives.²

In recent years, the US government has been able to use its economic and political influence over Peru's political decision makers, which has resulted in Peruvian governmental legislation aimed at limiting the cultivation of the coca leaf. Peru officially banned the sale of the leaf below 8,000 feet in 1977. Peruvian Legal Decree 22926 passed in 1976 declared a state of emergency in two coca leaf-producing departments of the country and called for a termination of all coca leaf production and marketing in that area.

The current US proposal discussed here is the most ambitious US plan to date to eradicate coca leaf and, if successful, will serve as a model for attempts elsewhere. The US government, in cooperation with the government of Peru, proposes financing a set of economic alternatives to coca leaf production in the departments of Huánuco and San Martín in the high jungle, while a massive eradication and control program there is concurrently carried out.

The goal is to eliminate coca leaf totally in one area of the Peruvian high jungle (the foothills of the Andes), where the US government claims that enough leaf is grown to supply up to 35 percent of the cocaine consumed in the United States. The government claims that coca leaf cultivation will not be significantly reduced elsewhere so that enough leaf will remain for the traditional consumption needs of an estimated two million Indians.

The proposal calls for the development of an economic infrastructure in this region which for over a decade has seen very little development, and which remains poorly integrated with the rest of the nation. Existing roads are to be upgraded, hydroelectric plants and agricultural facilities constructed, and marketing facilities, credit and extension services provided. Crop, livestock and agroindustrial activities are to be promoted. It is hoped that the yield of rice, corn, soybean, tea, coffee, palm oil and other agricultural products will be sufficiently increased so as to be more competitive with what peasants might have earned from the continued cultivation of the coca leaf.

An early phase of work calls for establishing land ownership patterns through cadastral surveys. Once it is determined who owns coca fields in the region, these owners will be given a fixed period of time to voluntarily uproot and burn their plants. Those who do not comply will lose their land; coca eradication teams will uproot their plants or spray them with an herbicide. Then the land will be redistributed to other peasants to cultivate alternative crops. Peasants will be entitled to government credit from a fund set up for that purpose. Motor vehicles, helicopters and surveillance equipment provided by the United States and used by Peruvians according to program agreement will help control cultivation of the leaf. US narcotics officials will train Peruvians in interdiction techniques.

Political Problems for Peru

At first glance, this proposal seems an opportunity for Peru to do its part to help control drug trafficking while at the same time receiving help in developing an underdeveloped geographical area. But in fact, Peru's leaders are by no means in total agreement that the program should be carried out because the program carries with it a number of political disincentives. These disincentives relate to the traditional importance of the coca leaf in the lives of Peruvian peasants.

The coca leaf has been a subject of controversy since the Spanish conquest. That controversy was renewed after World War II as coca exports began to decline, and the image of coca as "the wonder drug" faded into memory (Scott 1979:30). The coca leaf has been masticated in Peru since pre-Hispanic times. Today over two million peasants, located mostly in the highland areas, continue to masticate the leaf, which serves as a mild stimulant and is helpful to peasants in resisting harsh environmental conditions in the high Andes.

Coca leaf chewing apparently causes no harm to those who chew it. On the contrary, coca chewing is so essential an aspect of life in the Andes that the use of the leaf has come to symbolize "what it means to be human" in Andean society (Carter and Mamani 1978). "The act of chewing coca leaves is an unequivocal statement of cultural loyalties" (Allen 1961). The leaf serves as a medium of exchange, a means of communication with the supernatural world and is central to many other material and spiritual transactions.

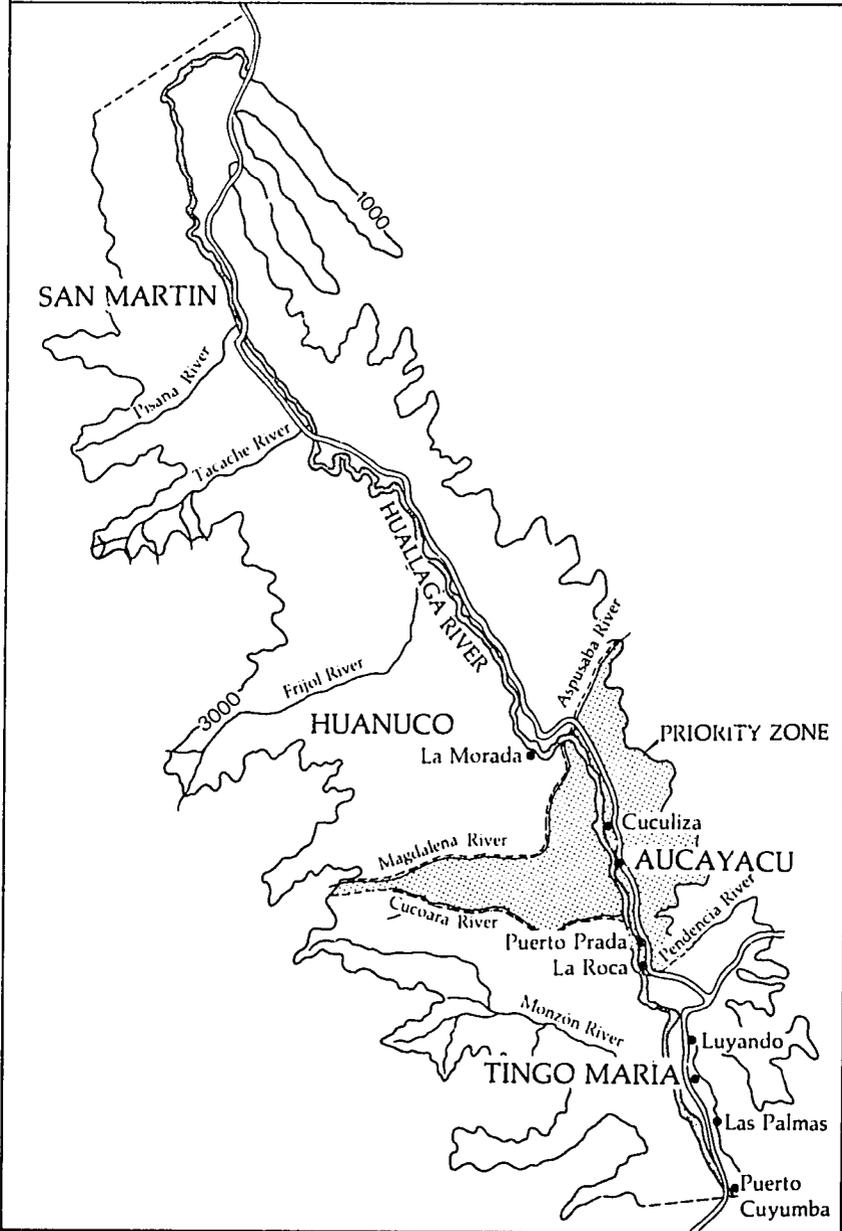
Thousands more peasants cultivate the coca leaf as their principal source of livelihood. These peasants will be most directly affected by the eradication proposal. These peasants arrived from other parts of Peru to the high jungle in the hope of making a living off the land by cultivating maize, beans, yucca, coffee, tea, etc. However, in recent years they have increasingly dedicated themselves to the cultivation of coca leaf because it is one of the few agricultural products whose sale allows them to realize a profit beyond the costs of production.

High bank interest rates, poor marketing arrangements, low prices on the national market and the fluctuations of cash crops on an unpredictable

HUALLAGA RIVER VALLEY PROJECT

Total Project Area 1,052,218 hectares

Priority Zone Area 120,941 hectares



The "Huallaga Project" refers to the entire rural development project in the Huallaga River Valley. The "Priority Zone" refers to the area between Tingo Maria and Aucayacu, where the greatest amount of rural development was taking place (in 1981) – and where the Peruvian government was repressing coca farmers the most.

world market have all influenced peasants to turn increasingly to the one cash crop they know they can sell at a profit, coca leaf. There is no other crop that can compete with the leaf, yield up to six harvests a year and is always paid for in cash. Eradication of coca leaf in this part of Peru would not only eliminate the only viable economic activity available to the agriculturalist, it would also create problems for the government; peasants have already begun to organize in their own defense. Anthropologists, Indianists and others who view proposed eradication to be harmful to sectors of the Peruvian peasantry have brought peasant representatives together to discuss the proposed eradication and to lodge formal protest.

In the last several years, the amount of coca leaf cultivated has increased dramatically: the more lucrative possibilities of selling coca leaf to merchants who pay (illegally) much higher prices for coca than for other crops has attracted many agriculturalists. The US government estimates that since 1972 coca leaf cultivation has increased from 1,600 to 20,000 hectares in area (1 hectare = 2.5 acres) in the Tingo María area of Peru, while land dedicated to cultivation of cacao has decreased from 738 to 400 hectares and coffee from 5,900 to 3,500 hectares (DEA 1978).

Peasants prefer to sell coca leaf to merchants illegally rather than to Peruvian government officials because much higher prices are paid on the black market. However, it is not so much the peasant farmer who profits from trafficking in coca leaf as it is the intermediary merchant or trafficker whom the merchant sells to. The peasant cultivator receives only a fraction of the total amount of money generated from trafficking, while the public fisc or state treasury receives nothing.

The farmer who cultivates a little over a hectare of leaf can earn the equivalent of several thousand dollars a year. However, this amount of leaf, which makes up to six kg of basic coca paste and is worth several thousand dollars per kg in South America, when converted to pure cocaine (usually in Colombia) has a value of \$10,000 per kg. The wholesale value of this cocaine in New York City in 1981 was \$65,000. This figure can be multiplied by at least 10 times when the cocaine is diluted or cut and sold. Coca leaf farmers who earn several thousand dollars a year produce the raw material for a product whose value is \$650,000!

In addition to angry peasants, there are others who will be harmed if eradication occurs; these individuals too can be expected to pressure government officials not to accept the US eradication proposal. Corruption has been endemic in both the private and public sector in the high jungle area. Some government officials, including police, are allegedly involved in trafficking; past high ranking officials at the national level have also allegedly been involved (*Latin American Weekly Report* 1980).

Individuals with powerful economic interests at the regional level who are involved in trafficking use their influence with local officials. Some of these individuals' families were once large landholding families who lost land but not necessarily power as a result of agrarian reform. Others are local store owners who have daily contact with agriculturalists who buy

their clothes, food and appliances. Such contact facilitates a relationship between peasants and merchants which at times includes illegal purchase of leaf by merchants from their peasant clients.

The town of Tingo María has grown large in recent years precisely in relation to the economic boom in the region which has resulted from "the coca fever." It is widely known that local business leaders in the town oppose proposed eradication plans.³

Peruvian Dependency

The Peruvian government is likely to accept the US proposal to eradicate coca leaf despite angry protests from those who question the legitimacy of eradication. This likely acceptance stems largely from the US offer to provide economic aid in exchange for eradication.

The perspective for understanding the significance of eradication with regional economic development must be both global and historical. This requires a discussion of the eradication proposal in relation to Peru's status as a dependent capitalist state, whose financial stability and national well-being is directly connected to economic policies determined by more powerful nations, by international lending institutions and above all, by the US government.

From 1968 to 1975, under the regime of President Juan Velasco Alvarado, the Peruvian government displaced agrarian elites, severed dependency ties with international lending organizations such as the World Bank and defined policies in the interest of peasant communities. However, by the end of 1975, when General Francisco Morales Bermúdez had taken office, Peru found itself in deep fiscal crisis and in considerable external debt. It had accumulated international debts amounting to billions of dollars, which it owed largely to US commercial banks (Morley 1978).

In 1977 the International Monetary Fund (IMF) promised to help Peru bail out of its fiscal crisis with a stabilization plan that included lowering tariff barriers and import quotas, raising food and fuel prices and limiting wage increases to rates far below the inflation rate. These measures were designed to reduce inflation by eliminating budget deficits (Bollinger 1980).

Since that time, the Peruvian government has maintained low wages and high unemployment; suffered consequent labor unrest; and experienced social protest from Peru's poor, who demand lower food prices and a cessation to spiraling inflation. However, as the government attempts to pay public sector debts, food prices continue to rise. Consequently, Peruvian workers' income is lower than it was in the early 1970s.

The above is true despite the fact that Peru's export-import balance has turned positive due to high prices received for petroleum and minerals that Peru sells abroad. But wealth generated from this industrial development has been used to pay off external debts to foreign lending agencies rather than to subsidize lower prices for food, housing or fuel costs in accord with agreements made between the Peruvian government and lending agencies such as the IMF.

The present regime of President Belaúnde Terry⁴ still faces soaring inflation rates if not a vast export-import balance. Since Belaúnde Terry took office 13 months ago, prices have increased more than 80 percent, food subsidies have been cut, and half of Peru's workforce is unemployed or underemployed (Barton 1981:10). Yet, the current regime seems set upon intensifying foreign investment as a way of dealing with Peru's economic woes. Peru, as one expert comments, seems ready for a new period of capitalist expansion (Bollinger 1980) and has invited foreign lending agencies to play an increased role in making decisions concerning Peruvian development.

President Belaúnde Terry has been a long-time advocate of the idea that the high jungle, where coca leaf cultivation is now booming, could be further developed to serve as a kind of bread basket to help feed Peru by providing the vegetables, meat, fats and oils that Peru's citizens demand at reasonable prices. Increased food production from the high jungle would also help break the bottleneck of high expenditures to Peru for the foodstuffs it now imports to help feed its citizens.

However, Peru is under continued pressures by international lending agencies and by technocrats in important positions in Peruvian government to promote industrial development rather than agriculture. Hence, the special appeal of the US proposal to develop the high jungle in exchange for eradication of the coca leaf in parts of the high jungle.

As supervisor of this development effort, AID would guide the process of US and foreign interests' investment in high jungle projects. Peru could thereby continue to utilize its own scarce resources to pay off remaining debts it owes. AID would carry out its overriding mandate which, according to a former AID employee and anthropologist, is to "move money in a timely and efficient manner" (Hoben 1980).

A newly enacted Peruvian Agricultural Promotion Law has already changed the interest rate structure in the high jungle, thereby improving "the credit worthiness" of the area by permitting the purchase, sale and mortgaging of land (World Bank 1981).

By eliminating prohibitions on the mortgaging of land, this law has effectively dismantled the purpose of the agrarian reform in the high jungle, which was based on the premise that land could not be sold to another and was to assure that land belonged to the tiller. Local and foreign companies are now being encouraged to acquire up to 10,000 hectares for agricultural and forestry development.

The US proposal to eradicate coca leaf and promote development in the high jungle is in keeping with the Peruvian government's expressed effort to individualize land ownership in the countryside. According to the proposal, peasants who now cultivate coca leaf must prove individual sponsored credit to grow crops other than coca once coca is eradicated. Once individual land ownership and entitlement are established, the stage is set for buying and selling land and for applying government taxes. In this way,

government bureaucracy can expand its infrastructure and control over Peruvian peasants.

Some investigators believe that the Peruvian government is interested in controlling drug trafficking in order to help control inflation. Earnings from illicit drug exports, however, tend to undo Peruvian officials' efforts to fight inflation (*Latin American Weekly Report* November 1979).

The inflation results from the large amount of black market dollars circulating illegally in the Peruvian economy.⁵ The exact dimensions of the inflation caused by black market dollars circulating in the Peruvian economy is unknown. However, the economic, political and social instability that have resulted in recent years from inflation have been considerable.

In 1980 inflation was 80 percent for the year. Last May, prices for milk, cooking oil and gasoline doubled overnight. Protests broke out spontaneously all over the country, and preparations for a general strike began (Bollinger 1980:28).

The wealth generated from cocaine trafficking is so great that it may be in the best interest of the Peruvian government to gain as much control as possible over trafficking. Centralized government control of trafficking and all aspects of the sale, distribution and commercialization of the leaf can only strengthen the Peruvian government's position with regard to its most valuable commercial commodity, coca, and its derivatives.

United States Government Interests

The US proposal to eradicate coca leaf and develop the Peruvian high jungle, serves a number of North American government interests. It reinforces Peru's dependent status on North America because countries such as Peru which receive such US "aid" are expected to repay the US not only in economic terms, but also indirectly through support for US foreign policy decisions. The US proposal would also create economic incentives in the high jungle which would result in a transition away from farming based upon a simple and traditional agricultural technology (coca leaf farming) to the cultivation of cash crops for the legitimate market, further integrating peasants into the commercial sector through the production of a marketable surplus.

Cultivating and processing these other crops and agroindustrial products (coffee, palm oil, yucca flour, forestry products, etc.) depends more on farm machinery, chemicals and management services — all of which Peru sorely lacks — than does simple coca leaf farming. US aid to eradicate coca leaf and promote alternative crops therefore implies Peruvian dependence on imported farm technology as well.

US aid of the kind proposed for Peru contributes to modernization along lines conducive to the long-term economic and political interests of the United States. Payer (1980:35) notes that such "aid" modernizes and also monetizes rural society, facilitating the peasants' transition from traditional isolation to further integration with the national and international economy.

However, this transition is not necessarily beneficial to the recipients of such aid if the resulting integration is poorly carried out. Lappe, Collins and Kinley (1979) recently noted that US foreign aid frequently fails to reach the poor because of necessity it is based on a fallacy — namely, that aid can reach the powerless when funneled through the powerful.

Another motive for the US proposal to eradicate coca leaf in Peru is that it represents an attempt by drug control agencies in the US to show that they can effectively stop cocaine trafficking. According to one estimate, 60-120 tons of cocaine are consumed in the US alone (*The New York Times* June 1980). It is believed that as many as 7,000 unauthorized drug-bearing flights arrive every year from South America (*The New York Times* May 1980). Joint committees of Congress have criticized government efforts to interdict trafficking.

The enormous wealth generated from cocaine trafficking is impossible to calculate exactly. Rough estimates indicate that Bolivia and Peru together produce enough metric tons of leaf to make 25 billion dollars worth of cocaine, if all this leaf cultivated illegally were converted into cocaine, and if the drug were sold at its current wholesale value (\$65,000 per kg). Two-thirds of this amount is Peru's share, since official DEA (US Drug Enforcement Administration) estimates indicate that Peru produces twice as much leaf as Bolivia.⁶

Whatever amount of money circulates as a result of cocaine trafficking, this enormous quantity can have destabilizing effects on private banking institutions and even governments, as the Vienna-based International Narcotics Control Board has recently noted (*WHO Journal* February 1981). Therefore, the US effort to eradicate coca leaf, even if only partially successful, can also be viewed as an effort by the United States government to deal with the corruption and disequilibrium the circulation of vast amounts of illegal currency causes.

Conclusions

The Peruvian government is likely to implement the North American proposal despite the inevitable protest that will occur from those peasants who fear their economic livelihood will be harmed and from those peasants who fear that their centuries-old traditional use of the leaf will be jeopardized. Peasants recognize that no other crop can substitute for coca leaf in terms of profitability and the ability to meet cash needs peasants face; no other substance or cultural element can replace coca's cultural importance or value in helping peasants live under the difficulties stemming from life at high altitudes in the Andes.

However, peasants' protests against government threats and actions to curtail coca leaf cultivation have, to date, not been of sufficient militancy or sufficiently threatening to the established order for the Peruvian government to reject the idea of eradication in parts of the high jungle in return for foreign assistance to develop the high jungle.

Peru remains an underdeveloped capitalist state whose economic system

is integrated into a larger global economic system and is especially influenced by the US government's attitudes and actions. Recently, several international lending institutions, such as the IMF, which is strongly influenced by North American banking interests, "rescued" Peru's bankrupt economy with a series of loans. These institutions have emphasized the importance of promoting Peruvian industrial development. One result has been the stagnation of Peruvian agriculture and, in particular, agricultural development of the high jungle.

Support for promotion of Peruvian industrial development is motivated not only by the belief of lending institutions that promotion of petroleum and mining production in Peru will help assure that Peru pays off its external debts, but also by a need for these products in the developed world.

The coca leaf cultivation boom in the Peruvian high jungle the last several years reflects an increased demand in the US and elsewhere for the raw materials that are used to manufacture cocaine as well as the Peruvian government's lack of support to promote agriculture in general. Not only do other crops fail to make close to the profits coca leaf does, but high bank interest rates, poor marketing possibilities, fluctuating prices and soaring inflation make cultivation of most other crops a losing proposition for the peasant.

Hence the appeal of the North American proposal; it would increase Peru's agricultural and agroindustrial exports as well as its production of food crops to feed the urban poor hit hardest by soaring food costs.⁷ A developed high jungle might also mean increased work opportunities for Peru's unemployed and a geographical area into which some of Peru's highly concentrated highland Indian population might be funneled.

Other indirect results are likely to follow from implementation of the development part of the US proposal. These benefits are thought to include further integration of peasant life into national life, individualization of land ownership and a technological transfer from a traditional and independent peasant economy to one more dependent on production on the national and international market, none of which have been proven to be beneficial to peasants. Peru might also, through the eradication part of the proposal, gain greater control over an extraordinarily valuable (albeit illegal) commodity and the inflation it has caused.

The US proposal represents a diversity of North American interests. The eradication aspects of the proposal may help to incite Congressional criticism that US drug control agencies have not been successful in curbing cocaine trafficking. The development aspects of the proposal might extend North American influence over the Peruvian government's national policy decisions and create greater dependency ties between Peru and the United States.

PART II

Summary of Obstacles to Crop Substitution and Eradication in the Upper Huallaga, Peru

I and Cesar Fonseca Martel, an anthropologist at the University of San Marcos in Lima, Peru, summarized our investigation of the potential impact of a plan to eradicate coca leaf and substitute other crops in the Tingo María-Aucayacu region. I note below a number of the points made in our 1981 AID report which I continue to support.

- A. Total eradication of all coca leaf in the Tingo María-Aucayacu area should not be carried out, and is probably not feasible given the political implications of such an action.
- B. In the event of eradication, the government of Peru must guarantee the continued supply of leaf from the Tingo María region which is destined for internal consumption. An efficient control system should be able to generate availability of leaf for legitimate purposes while suppressing the trafficking of leaf for illegitimate purposes. An inefficient control system will debilitate proposed plans for development because agriculturalists find coca farming far more lucrative than any other agricultural activity.
- C. The majority of agriculturalists grow small quantities of coca leaf which traditionally has contributed to only a part (although an important part) of their family income. We distinguish these agriculturalists (the majority) from a much smaller group of agriculturalists who have much larger holdings and who monocrop. We do not know, however, exactly what percentage of the total agricultural population in the region this latter group (a minority) comprises.

We believe policy decisions with regard to eradication must consider the diversity of existing land tenure patterns, the distinct amounts of land in coca production among differing groups of growers and the traditional systems of barter and exchange of coca leaf for highland products. A single policy of eradication of all coca leaf in the region, based on an assumption that all growers are large landholders and *narcotraficantes* (narcotics traffickers) appears inappropriate given the existing economic and social realities in the region.

Such a policy of total eradication seems particularly ill-advised given our lack of knowledge concerning how much leaf from the region traditionally has served the internal consumption needs of the Peruvian people and will be required in the future to meet these needs; given our basic lack of information concerning present land tenure systems; and given our lack of knowledge concerning how these land systems can be transformed to accommodate the needs of thousands of agriculturalists who may be displaced from their homes on the hillside if and when coca leaf is eradicated there. Agriculturalists who practice a centuries-old tradition of barter of small quantities of coca leaf in exchange for highland products such as potatoes, onions and meat should be permitted to continue to do so. Alleged harassment by

police of agriculturalists carrying small quantities of leaf for barter in the Sierra, if actually perpetuated by police, should cease.

- D. ENACO (Empresa Nacional de la Coca or National Coca Enterprise) should play a strong and vital role in the control, commercialization and distribution of whatever leaf is to be cultivated, if and when eradication efforts begin.
- E. Police control and alleged harassment of *some* agriculturalists residing close to the Tingo María-Aucayacu highway appears to have contributed to a reduction in the amount of coca which is cultivated by these agriculturalists.

An objective evaluation of these police actions is important in order to evaluate the efficacy of control methods in significantly reducing coca cultivation on a broad basis. Vast fields of coca (a monocrop) apparently exist high up in the hills off the main highway; yet it is the farmer with a few plots close to the road who is most frequently the object of police actions according to a number of colonization authorities. Potential obstacles to successful economic development are noted below.

1. Lack of information concerning present migration patterns into and out of the area and paucity of information regarding present land tenure systems will complicate development efforts.
2. Inability of the Agrarian Reform office in Tingo María to supervise titling operations and to deal with the many conflicts over land invasions, incursions and transfers, which are common.
3. The tendency of local agricultural extension agents to promote specialized farming and cattle raising activities rather than a mixed farming system based on the cultivation of a number of distinct crops has contributed to agriculturalists' past failures.
4. Some agroindustrial enterprises such as EMDEPALMA (Empresa Nacional de Palma or National Palm Enterprise) have a limited absorptive capacity for processing what are already existing quantities of agricultural products, such as palm plants. Have there been studies of the further absorptive capacities of proposed agroindustrial enterprises?
5. An inadequate system for the commercialization of agricultural and agroindustrial products exists throughout the region. This includes the inability of state agencies such as ECASA (Empresa Comercializadora de Arroz Sociedad Anonima or Commercial Rice Enterprise) or ENCI (Empresa Comercializadora Insumos or Commercial Agriculture Enterprise) to purchase maize, rice and soybeans at prices that allow the agriculturalists to realize a profit. Agrarian Bank interest rates make adequate commercialization of agricultural products problematic for the peasant farmer.
6. The failure of some cooperatives to meet the productive needs of their members is in part due to government officials' excessive paternalism toward these agriculturalists.

7. The individualism that characterizes social life in the region, and an apparent absence of social structures at the community level which bind community members together, will complicate carrying out development projects.
8. The Peruvian government's position with regard to eradicating coca leaf and the future role of ENACO in the region, remains ambiguous and confuses agriculturalists about the government's ultimate intentions regarding their lives and well-being.
9. Based on their past experiences with the Peruvian government's development projects, peasant agriculturalists remain passive and skeptical about the government's proposed development efforts.
10. Finally, we emphasize the role of coca in the indigenous economy.

The anthropological literature documents well the importance of coca in the economic and cultural life of indigenous people of Peruvian and Bolivian highlands. What impact will coca eradication have on the economic and cultural life, and the biophysical adaptation of highland peasants who masticate this leaf? Although it is claimed that most of the leaf cultivated in Tingo María is exported, ultimately as cocaine, there are no studies we know of to indicate what percentage of this leaf is exported and what percentage is consumed traditionally.

Since pre-Hispanic times peasants have traded coca in the lowlands for highlands products. This traditional system of barter still operates among the peasants of the region. What impact will eradication of coca have on traditional economic interactions between lowland peasant groups and highland communities? We wish to emphasize the potential harm to local economic traditions which may result from eradication of coca leaf in the Tingo María area. Roderick Burchard has succinctly indicated the importance of coca to the local lowland economy:

Perhaps the major conclusion to be made here is that one of the most significant of all ecological facts about the coca leaf which has been overlooked by researchers but not by Andean peasants is that it is produced 12 months of the year. Furthermore, one of the most significant facts which has been overlooked by researchers arguing that its continued cultivation is "anti-economic" is that access to coca leaf has long meant and continues to mean access to food for Andean peasants, and coca and food exchanges between peoples living in different ecological zones are part of an adaptive process which is one of much longer duration than even the various myths of the "sacred leaf of the Incas. . . ." (Burchard 1976:572).

Notes

¹A version of Part I was published in the *Journal of Drug Issues*, Winter 1983, pp. 135-145.

²A similar proposal was made to the government of Bolivia. However, the right-wing military faction that assumed power in July 1980 through a coup did not act on this proposal.

³Tingo María is popularly referred to as "The White City" or "Little Chicago." The names suggest the violent nature of life in this town, which has grown considerably in recent years reflecting the growth of cocaine trafficking.

⁴At the time this paper was delivered at Cornell in April 1985, Belaúnde Terry was president. Alan García, who replaced him in office on July 28, 1985, remains the current president.

⁵Peru is experiencing a commodity export boom that has greatly increased foreign exchange earnings and promotes inflation. The government has attempted to counter the effects of this trend by encouraging imports. But, according to the authoritative *Latin American Weekly Report*, earnings from illicit drug money undermine the effort (2 November 1979:9-10).

⁶It is impossible to know the exact value in US dollars of cocaine made from Bolivian and Peruvian coca leaves. No one knows for sure just how much leaf is cultivated, and the value of the drug in the US varies. The estimated figure of \$25 billion was derived by dividing officially stated amounts of illegal coca cultivated in Peru and Bolivia by the number of kilograms of leaf required to produce one kilogram of cocaine. This figure was then multiplied by 65,000, the 1981 wholesale value in dollars of one kilogram of cocaine.

⁷Increased crop yields might result from developmental efforts. This does not, of course, guarantee increased incomes for agriculturalists who produce these crops. Profit margins would depend on a number of factors including government price subsidies, the role of intermediaries in marketing crops, etc.

Bibliography

Allen, C. J.

- 1981 To Be Quechua: The Symbolism of Coca Chewing in Peru. *American Ethnologist*, 8:157-171.

Barton, C.

- 1981 Peru: General Strike Averted. *The Guardian*, 9 September, p.10.

Bollinger, W.

- 1980 *Peru Today*. North American Congress on Latin America, 14:2-35.

Burchard, R. E.

- 1976 Myths of the Sacred Leaf. Masters thesis, University of Indiana, Bloomington.

Carter, W. E. and M. Mamani

- 1978 Patronos del Uso de la Coca en Bolivia. *América Indígena*, 38:905-937.

Drug Enforcement Administration (DEA)

- 1978 Unpublished reports.

Grinspoon, L., and J. B. Bakalar

- 1976 *Cocaine: A Drug and Its Social Evolution*. New York: Basic Books.

Hoben, A.

- n.d. Agricultural Decision Making in Foreign Assistance: An Anthropological Analysis. In P.F. Barlett, ed. *Agricultural Decision Making*. New York: Academic Press.

The Journal

- 1981 World Drug Control Comes Under UN Scrutiny. 2 January, p. 9.

Lappe, F. M., J. Collins and D. Kinley

- 1979 *AID As Obstacle*. San Francisco: Institute for Food and Development Policy.

Latin American Regional Report

- 1980 4 April, pp. 3-4.

Latin American Weekly Report

- 1979 2 November, pp. 3-4, 9-10.

- 1980 2 May, p. 12.

Morley, M. H.

- 1978 The Rise and Fall of Regional Economic Nationalism. In *Critical Perspectives on Capitalism in the Third World*. New York: Monthly Review Press.

The New York Times

- 1980 22 May; 26 June.

Payer, C.

- 1980 The World Bank and the Small Farmer. *Monthly Review*, 32:30-48.

Scott, R. E.

- 1979 And Never The Twain Shall Meet: A Study of Research and Policy on Coca Chewing in Peru. Master's thesis, Department of Anthropology, Michigan State University, East Lansing, MI.

World Bank

1981 *Peru: Major Development Policy Issues and Recommendations*. Washington, DC:
The World Bank.

THE COLOMBIAN CONNECTION: THE IMPACT OF DRUG TRAFFIC ON COLOMBIA

Bruce Bagley

I want to provide an overview of the impact of drugs on Colombia. First, I will discuss the history of the introduction of both cocaine and marijuana in Colombia. Second, I will discuss at some length the economic, social and political implications of the drug problem as it has emerged over the last two decades in Colombia, and the kinds of problems it has presented. Finally, I want to make a few concluding observations on the nature of US policy with regard to the drug problem, its impact in Colombia and its future.

Coca has been in Colombia for several thousand years as pre-Columbian evidence quite clearly indicates (see Plowman this volume). A number of contemporary indigenous cultures continue to use coca: the Páez, for example, still an important tribe in Colombia and one of the most numerous, continue to use coca. Long before the European conquest it was well-known on the North Coast in the Sierra Nevada de Santa Marta, where indigenous inhabitants continue to use it.

It is more difficult to date the introduction of marijuana, a much more recent event in Colombia. From my interviews on the Northern Coast with black peasants, it is quite clear that marijuana has been smoked in Colombia for at least three generations. The development of marijuana as a major, increasingly commercialized crop in Colombia, however, really begins in the early 1960s, paralleling, of course, the boom in marijuana smoking in the United States. One Colombian variety, Santa Marta Gold, had by 1967-1968 already reached certain legendary proportions, in both Colombia and various parts of the United States.

As a result of the United States government's efforts, particularly the Nixon administration's, to reduce the flow of marijuana from Mexico into the country (especially Operation Intercept in 1969) and subsequent follow-up efforts by the Mexican government, marijuana production began to shift from Mexico to Colombia. The Colombian marijuana boom began in the late 1960s, and by the early 1970s Colombia was firmly established in marijuana production folklore. Marijuana became so important in Colombia that the mid-1970s is now frequently referred to as the period of the "marijuana boom."

After the marijuana boom, cocaine also began to be produced for export. During the mid- and late 1970s, both cocaine and marijuana, along with coffee and sugar, probably sustained the agricultural economy during what was otherwise a very difficult and stressful time in Colombia.

Colombia supplies 70-80 percent of all the processed cocaine that comes

into the US. It also supplies an estimated 60-70 percent of all of the marijuana. The 1980 Bolivian coup led to a new phase of cocaine production in Colombia. By attempting to integrate the Bolivian industry both vertically and horizontally, the García Mesa coup of 1980 displaced traditional coca export patterns from Bolivia into Colombia where it was processed. After 1980, Colombian drug lords began to establish huge new plantations. Recently, a number of plantations with more than 10,000 hectares were discovered in the Putu Mayo and the Eastern Plains region of Colombia.

What has been the impact on the Colombian economy of the marijuana and cocaine booms? Statistics on this kind of problem are exceedingly difficult to get; first, the drug economy is clandestine, and second, attention has been focused on it only relatively recently. Estimates of total exports from Colombia range anywhere from \$1 to \$8 billion per year. The estimates the US Drug Enforcement Agency (DEA) and many of the Colombian authorities generally use range somewhere between \$3 to \$5 billion for cocaine and marijuana combined.

How much of this money returns to Colombia is another difficult question to answer. I recently interviewed the US ambassador to Colombia, Louis T. ~~Thoms~~, who indicated that somewhere between \$300 and \$400 million returns to the country. That is by far the lowest estimate I have heard. It is a serious underestimation of the amount of money which is actually returned or funneled into the Colombian economy each year in a variety of different ways. Once again, estimates generally range from \$2 to \$3 billion. These \$2-\$3 billion have had profound effects on the Colombian economy. They have had both negative and positive implications for the country's economic stability. (I want to run through some of those points, first indicating some of the positive impacts that, particularly, cocaine but also marijuana production have had and then subsequently, some of the negative implications, before passing on to the social and political implications.)

In Colombia, beginning in the early 1970s, agriculture boomed first with sugar, then with coffee after the Brazilian frost and most recently with marijuana and cocaine. Throughout the 1970s the Colombian agricultural economy grew at extremely high rates – somewhere between six and eight percent a year. Cocaine and marijuana were, in fact, major contributors to this economic boom. They also had a favorable impact on the balance of payments and were one of the underlying reasons that Colombia – vis-à-vis other Latin American nations – was able to weather the slowdown of 1979-1981 and the recession of 1981. About 500,000 Colombians are employed in either the marijuana or cocaine industries, or both, a significant increase from estimates in the early and mid-1970s of 100,000 to 150,000 Colombians. Hence, cocaine and marijuana have had a significant effect on employment during periods when the economy in general has slowed down quite dramatically. Wages individuals earn from jobs in both marijuana and cocaine production ranging from picking through distribution are generally estimated to be roughly 10 times higher than a Colombian

peasant or urban poor individual could earn from other equivalent forms of work.

Thus, the balance of payments and increase in wages and employment within the country are the two major positive impacts of the marijuana and cocaine boom. They obviously had the multiplier effects of maintaining the ability of individuals who otherwise would be outside the cash economy to purchase food for their families; that is, to create internal demand and hence strengthen the Colombian economy.

There are, however, a number of negative effects of drug production and trade on the Colombian economy. The introduction of commercial cocaine and marijuana production, similar to the introduction of any commercial crop, pushed peasants from subsistence agriculture to increasingly proletarianized positions within the rural economy. That process of proletarianization has created underlying currents of discontent and peasant movements that at times have produced localized rebellions as well as fed into the ongoing guerrilla struggles in Colombia.

Most importantly, the commercialization of both marijuana and cocaine production, though particularly cocaine, has had a devastating impact on the remaining indigenous population in Colombia. Colombia's population is approximately 29 million people. (It's not exactly clear how many people there are; the last census is incomplete.) Out of those 29 million or so, fewer than a million, perhaps as few as 500,000, are "Indian," according to most estimates. Much of the cocaine production which is taking place today is taking place precisely in those remote, relatively isolated mountainous and jungle areas where indigenous peoples have been able to survive to date, relatively intact. The commercialization and proletarianization processes have had a devastating impact on the traditional, relatively closed corporate communities in southern Colombia, in the Sierra Nevada, and in much of the *Llanos Orientales* (eastern plains).

Beyond the impact on subsistence agriculture and traditional peasant indigenous communities, I think it is important to indicate (as Kevin Healy did, see this volume) that in Colombia, the introduction of these two commercial crops has also led to an ongoing alienation of labor from traditional agricultural production; this has led to serious shortages of pickers and laborers in general in traditional crops such as bananas, coffee and sugar as well as to inflation in some sectors for brief periods of time (although these are clearly cyclical processes and overall increases in wage levels paid in Colombian agriculture have not occurred for the last 10-15 years). There has also been a concomitant drop in food production in many drug-producing areas as well as food shortages in both southern parts of the country and on the Atlantic Coast. Inflation has meant that much of the higher wages paid to workers have been used to meet basic subsistence needs. This finding supports Kevin Healy's conclusions about the overall dependency process in which the commercialization of agriculture is associated with not only marijuana and cocaine but with a variety of other crops as well.

Beyond the impact of coca and marijuana production on rural areas, there has been a major impact on the urban land market. The large influx of cash, particularly dollars, into Colombian society, and the hands of a small group of elites involved in the drug trade has led to increased land prices in major urban centers — Bogotá, Cali and Barranquilla. Widespread rumors indicate that cocaine dealers purchase farms, apartment buildings, office buildings and other real estate by delivering huge amounts of pesos in suitcases in order to avoid taxes and other legal implications. As a result, such purchases have pushed up the price of urban land and had a negative impact on the availability of low income housing in a number of areas of Bogotá, and several other major cities, precisely because of the drug-related cash's impact on land values.

During the 1970s, the Colombian government's reaction to the tremendous influx of illegal dollars into the country was an official policy or practice referred to in Colombia as the "*Ventanilla Siniestre*," or "Sinister Window." The Bank of the Republic was directed to accept money from any source with no questions asked. As a result, Colombia became one of the few countries to have a black market for the dollar below the official price of the dollar.

Closely associated with such financial policies, of course, are the drug dealers' efforts to take over legitimate businesses. Recent news magazine articles — in both *Time* and *Newsweek* — report that a number of the soccer teams in Colombia are now owned by *narcotraficantes* (drug dealers) or individuals linked to them. *Narcotraficantes* have also invested heavily in a variety of industries, from the textile mills in Antioquia and Medellín, to some of the major banks. At least three major banks in Colombia have closed as a result of *narcotraficantes* withdrawing funds from them. The *narcotraficantes*' illegal machinations have permeated Colombia's entire financial system, not simply a few isolated industries. The traffickers have commandeered some of the basic industries and services in the Colombian economy. And, they have fueled the process of corruption at all levels of the society — within the business community and obviously within the political system.

Drug production and trade has had profound social implications for Colombia as well. While research to date is extremely inadequate because researchers for the most part have neglected the social impacts of the drug trade in Colombia, I want to raise some of the implications I have observed during various stays in Colombia. Conspicuous consumption is an important new phenomena in Colombian society; it is manifested in a variety of ways ranging from the importation of Mercedes Benzes, to the purchase of a variety of goods which are not normally consumed in Colombia. Many often dismiss this kind of cultural phenomena, but I think it is related, at the cultural level, to aspects of the dependency theory Kevin Healy discussed. Foreign status items establish consumption patterns in which the rewards the drug traffickers reap and ostentatiously display in places like Bogotá, have a profound impact on the way people perceive their society and the

kinds of rewards or disincentives which are provided for various types of endeavors, including the concomitant use of violence by the drug traffickers. What we see is that drug trafficking has been rewarded; by being rewarded and being closely associated with violence, violence is emphasized increasingly in Colombia. Throughout the 1970s an already violent society (one in which the civil war known as the *Violencia* between 1948 and 1958 took 200,000 people's lives) became increasingly more violent; it also became a society in which it is difficult to distinguish drug-related violence from petty crime and from guerrilla activities. While little research has been done on these kinds of, if you like, psychological implications, they are important issues.

Parallel to this, we can identify the emergence or rise of a new group in Colombia, a new social strata (I hesitate to call it a social class). The best label for this group is *nouveau riche*, that is, people who through the cocaine and the marijuana trade have rapidly achieved upward mobility in a way unprecedented in Colombian society for the last few centuries. This *nouveau riche* group is the one most frequently heard about in connection with the drug trade. It includes the Carlos Lenders, the Pablo Escobars, the Ochoas and other families who have risen to prominence and who are considered to be the drug lords in Colombia. They comprise the most visible group that is involved in the drug trade and have increasingly attempted to move into areas beyond business, into politics itself by purchasing political power.

The social impacts of the cocaine and marijuana booms is felt most in indigenous communities where cultural survival is difficult as a result both of these commercial products and the unrestrained violence that the drug lords are able to employ in a variety of areas, frequently with political protection (see Macdonald this volume).

The fourth social implication I want to note is the spread of drug consumption in Colombia. Historically Colombia has not, as is true of most of the Andean countries, been a major drug-consuming country. As the US State Department, the DEA and others have emphasized, this has been changing in Colombia. This change began in the middle and upper classes of Colombian society. Many of those who attended universities in the US in the 1960s and 1970s returned with consumption patterns they had taken with them when they came to the US. The introduction of drug consumption at those levels of society was never a serious problem in Colombia: it was limited to a fairly small sector of the society — one that could afford drugs, did not have to indulge in crime to get access to them and was relatively capable of controlling their use. Over the latter part of the 1970s and particularly in the early 1980s, the use of *basuco*, a form of coca paste that is smoked rather than inhaled, has increased in Colombia. The reasons behind this increase are not at all clear. Some evidence indicates that the US recession and the decreased ability to buy luxury items created a surplus cocaine market in Colombia which could not be disposed of in other markets. Hence Colombians began pushing the partially refined paste used in *basuco*

more than in the past, at lower prices than in the past. Another theory contends that the spread of cocaine production in Colombia from 1980 on spurred a number of experiments in a variety of areas to develop different types of cocaine made from coca grown on different soils. Many of those experiments did not, if I can use this phrase, "fall on fertile ground" and hence produced less than adequate cocaine. It is this lower quality cocaine, the theory suggests, that is dumped in Colombia. There is probably a bit of truth to both theories, but nonetheless the increasing use and, in this case, abuse of cocaine in certain segments of Colombian society is an undeniable reality, particularly in the context of the urban poor in Medellín, where recession has caused high levels of unemployment. Many teenagers and others have been thrown into idleness which has resulted in drug abuse. The same is true in Colombia's other major cities — Bogotá, Cali, Barranquilla and others. Colombia is now increasingly preoccupied with the social problem drug consumption represents for the country internally.

The exact numbers of individuals using basuco in Colombia are not known. The US State Department and DEA tend to make much of this particular problem because it fits into their analysis — that is, it is no longer simply an American problem but also a Colombian problem. While there is no solid evidence to indicate exactly how many people are involved, we're probably talking about 100,000 to even 200,000 people. There also has not been a major effort to systematically study the degree to which drug abuse is a problem in Colombian cities. One of the reasons for the lack of research, and subsequently, knowledge about this topic is that such an investigation might undermine US policy. This, however, would be a major reason for conducting greater research in order to find out exactly the dimensions of the problem. It seems to me that there are few people who have attempted to do that, and funding is limited to do so in most areas of Colombia right now.

These, then, are some of the major social impacts of drugs in Colombia. The picture is incomplete, however, because the available literature does not address many of these kinds of problems.

More is known about the drug booms in terms of political impact. Once again there are major gaps in what is known — the mythology as opposed to the reality of the situation. Of the implications I have observed, read about or heard from people who have been working in Colombia, first and foremost, of course, is the pervasive corruption, violence and environment of intimidation which has developed in Colombia and affected every political institution in the country, from the local level through the national level. That is, from city councilmen in the smallest pueblos right through the national campaigns of congressmen as well as presidential candidates. *Time* magazine recently quoted a figure of perhaps a million dollars as the amount two major drug dealers pumped into both traditional parties, conservative and liberal, in the 1982 presidential campaign. But I think the phenomena is far more widespread. Virtually nothing is known about campaign financing in Colombia, nor do the country's laws permit any serious

or rigorous analysis of these practices. The information available is purely anecdotal; nonetheless, there is a generalized sentiment that drug money has infiltrated into political campaigns and into political parties in a big way in Colombia. This was reflected by the rise of two important Colombian drug dealers to positions of political leadership at both regional and national levels. Carlos Lender himself began a political party called the Movimiento Cívico de Liberación Nacional. That movement, which many people have characterized as a kind of eclectic blend of fascism and anarchy, developed a rather interesting following in a number of Colombia's major cities, particularly in the urban, poor barrios where Carlos Lender or his lieutenants allegedly wandered around and handed out large sums of money. Under those circumstances and given the poverty that characterizes countries like Colombia, the possibilities for garnering political support through the liberal use of drug money is a reality in these countries, and it is very much a threat to the existing system.

A second major point in terms of the drug boom's political impact is that there is no doubt that drug money has been funneled into a variety of death squad activities in Colombia. There are at least seven that I have identified. The most important death squad and the most publicized one is an organization called MAS, Muerte a Secuestradores, or Death to Kidnappers. The organization, created in the early 1980s, was financed by two of the drug kings in Colombia and has been linked to the systematic assassinations of labor union leaders, leftists, intellectuals, students and left wing political party leaders. Several hundred assassinations over the last five years have been attributed to MAS. Since President Betancur took office in 1982, there also have been accusations that the Colombian military itself was involved in the MAS. At least seventeen either active or retired Colombian military officers have been, in fact, indicted for their involvement in the MAS organization. There is a widespread belief that large numbers of others who have not been indicted were also involved. Because of the delicate balance between the executive and the military, civilian courts were not deemed competent to judge those cases. The military cases have been sent to military courts and to date – that is, over the last three years or so – there has been no action taken against any of those who were initially indicted.

This kind of linkage between drug money, death squads, anti-left activity and the military is, for many Colombians and in my opinion, an ominous kind of situation given the other problems that Colombia is confronting – that is, the efforts on the part of the Betancur administration to grant amnesty and issue a ceasefire, to deal in some up-front way with the guerrilla problem by incorporating them into the political system. MAS has threatened to end that process by assassinating a number of those who accepted the original amnesty, and is threatening to assassinate others. To give an example of what happens to those guerrillas who do finally accept the amnesty offer, Toledo Plata, one of the major leaders of the M19 in Colombia, was assassinated, it is generally believed, by MAS. Under these cir-

cumstances and exempting other kinds of problems, it's quite clear that there are major roadblocks or difficulties being placed in the way of the Betancur administration to prevent it from granting amnesty and calling a ceasefire. In this sense the drug implications are quite profound. Rather than being revolutionary or destabilizing for the political system, I think they tend to be conservative and anti-left and have impeded in many ways efforts at national reconciliation.

There has been a great deal of discussion, particularly in the DEA and State Department, about the nature of the linkage between the left wing guerrilla organizations in Colombia and the drug trade. While it is clear that there is some linkage, what exactly that linkage is, however, is not clear at all. The linkage in the first place can be established in terms of the Fuerzas Armadas Revolucionarias de Colombia (FARC) or Colombian Revolutionary Armed Forces, the oldest and longest standing guerrilla organization in all of Latin America. In those zones where it has operated, particularly in the southeastern plains in the department called Cauca, FARC has collected taxes or protection money and used that money to finance its activities. In their own publications FARC has indicated that it collects about 10 percent in those areas where it controls the territory. Since many of these areas produce drugs, the connection is clear.

There may well also have been a connection between drugs and arms flow. If you can smuggle drugs out of Colombia, the same basic channels can be used to smuggle guns into Colombia, and that appears to have happened in a number of cases. How widespread it is, once again, is difficult to determine; there is no solid evidence. Most of the guerrilla organizations argue that they are able to purchase the arms they need to continue to operate either on the black market or from the military itself. In that context then, it appears that the link between guerrillas, arms trafficking and drugs is relatively limited and has been overstated for political purposes. Nonetheless, the limited evidence indicates that there have been some links with some guerrilla organizations in Colombia. Whether or not the guerrillas actually cultivate drugs in those areas that they control is a question that has not been determined by any serious research. But the available evidence tends to disprove that hypothesis. The guerrillas have generally attempted to maintain a fairly low profile, and have not wanted to attract government attention by establishing large plantations of coca which obviously would provide targets for military activities. In fact, the whole strategy FARC adopted after the fall of Marquetalia in 1964 was precisely the opposite: to blend into the peasantry and to raid outside of the territory in which they actually lived and operated. In that sense, guerrillas establishing widespread links with arms trafficking and drugs would clearly be an invitation for greater militarization of the zones in which the guerrillas operate. While I don't believe that this has been a serious problem, once again, however, the evidence for either argument is quite weak.

A fourth and rarely considered implication of the drug boom in Colombia is its impact on peasant movements, particularly on an organization

called the Asociación Nacional de Usuarios Campesinos (ANUC) or National Association of Peasant Beneficiaries. This organization, which became radical in the early 1970s as a result of the conservative government's decision under the Prastrana administration to end the agrarian reform, has had the ground cut out from under it by the drug trade. This occurred precisely as the peasant organization was demanding agrarian reform throughout the 1960s and into the early 1970s, when the Colombian drug boom began. The drug boom, with its high wages and ability to generate employment at the levels I was talking about earlier, has, in my opinion, provided a kind of escape valve for the Colombian peasantry which has reduced the levels of peasant organization. Accompanying this reduction in organization is the kind of violence either by the military or by mafia-like organizations that has contributed to the destruction of peasant organizations in a number of areas. During the mid- and late 1970s, ANUC suffered greatly at the hands of both the drug dealers and the military. That organization, the first and only national peasant organization in Colombia, has essentially been gutted by government policies, generalized repression, selective cooptation and higher wages, and other opportunities for upward mobility the drug trade has provided. It is important to point out that Colombia probably has a stronger state, a state more capable of penetrating into a variety of key areas of the country (although not the more remote areas), than does Bolivia. The Colombian government has been able to use selective repression against peasant organizations in zones where there have been some traces of the drug trade in order to control them, and if unable to coopt them, then to repress them.

In this context, have drugs really been destabilizing the Colombian political system? My initial and tentative answer is no; it's the exact opposite. Drugs, cocaine and marijuana in particular, can be more easily compared to the introduction of another cash crop in the late nineteenth and early twentieth centuries than they can to any other phenomena; that is, they resemble the introduction of coffee in Colombia. Due to marijuana and cocaine a new *nouveau riche* has developed in Colombia much as in the late nineteenth and early twentieth centuries a coffee oligarchy developed in the country. Parts of the civil wars which were fought in the latter part of the nineteenth century, particularly the War of 1000 Days in Colombia, had something to do with the introduction of coffee and the socioeconomic changes that followed. Today, fairly conservative, often right-wing individuals link themselves frequently with MAS, with the military and with other organizations moving to legitimize themselves within the Colombian system, moving to gain status within that society, buying political power, buying into the system if you like, but not to disrupt that system in any fundamental way. Nonetheless, there is this sense that the old families in Colombia which have controlled the politics since the late nineteenth century and the introduction of coffee are now gradually incorporating and absorbing the *nouveau riche*, the Carlos Lenders that rise, not necessarily in the first generation but rather in the second and third generations. The children

of the drug dealers now join the major social clubs and marry into some of the more prestigious families. Many of these old families are precisely those families who were declining economically, and hence politically. With the introduction of coffee in the nineteenth century the new coffee barons also gradually married into more traditional, land-owning families, joining money and commercial agricultural exports with status within the society. Colombia's future is most likely one of stability rather than one of political destabilization.

There has been, however, a major wave of violence recently in Colombia, but I think the violence began much earlier. It is in some sense symbolized by Justice Minister Rodrigo Lara Bonilla's assassination in early April 1984. Since then the Colombian government's attitude has shifted, even with the growing use of basuco, and other kinds of drug abuse problems in Colombia. Prior to this date, there was this general belief in the country that the problem was the gringos', not Colombia's and that if demand could be limited in the United States, it would discourage production and hence the problems in Colombia. Increasingly, President Betancur has felt that this general belief is not a sufficient response to the problem in Colombia. In fact, after the death of Minister Lara Bonilla, Betancur appeared on national television beside the minister's grave and declared war against the drug dealers in Colombia. He resisted for more than two years implementing a treaty signed by the previous Turbay Ayala government calling for the extradition to the US of Colombian citizens who had committed crimes in the US. He has now extradited five Colombians and a whole series of others are being processed for extradition. In his trip to Washington in early 1985, the only comment that President Betancur made on this extradition process was that he hopes Colombia's request for US citizens who have committed crimes in Colombia will also be honored. I think we're likely to see the extradition of a number of US citizens to Colombia to be tried under the Colombian justice system. Colombia's war against drugs goes well beyond extradition. The Colombian government has begun to use the herbicide *glisofato* (goyosophate), which is supposed to be similar to paraquat, but perhaps even more dangerous. Use of glisofato was resisted for a number of years in the country because in the zones where peasant occupation coincides with drug production, not only the chickens, dogs and cats, but the kids and the peasants themselves would be sprayed. This has been and remains a serious problem. The first sprayings took place in the Sierra Nevada de Santa Marta about a year ago, and they continued in a variety of other areas. The Sierra Nevada is, of course, a major zone of indigenous population, probably not selected arbitrarily.

The present wave of mindless and almost inexplicable violence will fairly rapidly die down. We're not going to see too many more efforts to bomb the US embassy or to assassinate the US ambassador in Colombia. Drug dealers simply cannot sustain this kind of war, and frankly, many of the more intelligent drug dealers see those individuals who've engaged in these kinds of activities as expendable. They would like to get rid of these individuals

because they are drawing attention to the others who've been a little bit calmer, a little bit more institutionalized in their process. So I think that we're likely to see the violence directed at US government officials and Colombian government officials fade slightly. That does not mean, however, that the drug trade is waning.

There are at least two kinds of drug dealers in Colombia; there may be others. One type is the *nouveau riche* – those people who have used drugs as an avenue of upward mobility, and who, in seeking political protection, have sought to buy political power and social status. They're the easy targets for the Colombian government because they're easily identified, they've been the most flamboyant, and they're the ones who've indulged in the kinds of activities which had received so much media coverage. There is, however, another segment of drug lords in Colombia, one that has kept a much lower profile and is far more intertwined with the existing political and social system within the country. It includes a number of families who can trace their roots back to the Conquest itself and whose names are common knowledge in Colombia: the Dávila family, the Díaz Granados, the Castros – all from the key departments on the Northern Coast, particularly the César, the Buajira, Magdalena and Bolivaro. The regional and local political systems in these areas are clearly and intimately intertwined with the drug trade. Individuals from these well-known families have served as mayors, senators and governors within the Colombian political system, and they themselves provide political protection to the networks of drug dealers and drug traffickers that have grown up around them. These individuals have not been touched by the recent campaign in Colombia. They have essentially been able to maintain political protection, whereas the more flamboyant, highly exposed and recently arrived drug dealers have been easy targets and the most forcefully attacked.

Drug trafficking in Colombia will continue as long as there is demand in the United States. Colombian people are known for their entrepreneurship; they are going to pursue the fabulous profits that can be made from drugs. Nothing like it has been seen in Colombia any time in its past history. It simply cannot be eradicated nor can any other commodity be substituted for it. We can accept it as a fundamental fact of life. The US government has resisted accepting this fact because we have a bureaucracy and a group of drug-enforcement people which have a vested interest in preserving or even expanding their programs. This phenomena is not unknown in bureaucracies. In fact, the Reagan administration has railed against this process in a number of areas in our society. The resistance of people who make their livings and whose careers and futures are tied to claiming victory from time to time with one or another bust and telling us how much they have been able to confiscate, and so on, is a similar phenomenon. The economic facts of the matter are that as long as there is a multibillion dollar market available to Colombia, whose alternatives are to sell sugar at four cents a pound, or coffee, there is no question that a large number of poor peasants as well as the entrepreneurial elements in Colombia are going to

continue in the drug trade. Hence there is little hope for the success of many policies discussed at this conference and criticized in Brian Moser's Frontier Series films "The Coca/Cocaine Trilogy," produced by Central Independent Television in Birmingham, England.

The only potentially viable alternative is legalization, but that will not even be considered either in our own political system or in Colombia's. The findings are equally true for Ecuador, Peru and Bolivia. In the United States, many of the different constituencies feel quite strongly about the drug question, not necessarily in rational terms but basically due to moral or religious beliefs. The fundamentalist religious groups, the Catholic church and others in this country provide powerful constituencies that will not tolerate legalized cocaine. As a result, no politician in the United States will even raise the issue, let alone campaign on it. In Colombia the pressures are even more intense. The Catholic church in Colombia is far more conservative than it is in much of the rest of the region. It adamantly opposes legalization despite movements by groups as powerful as the National Federation of Coffee Growers in Colombia as well as the Asociación Nacional de Institutos Financieros (ANIF) or National Association of Financial Institutes to legalize cocaine or at least consider legalizing it. Both of these organizations have been forced to remain silent with regard to legalization because of the moral and religious outcry that would certainly result. As long as the moral factor exists, there is no possibility that discussion will advance in any way. Because of the possibilities of economic sanctions, Colombia and other Andean countries will not move towards legalization unless the United States does. Thus, the situation is in a gridlock in which there is every probability that we will continue to spend large amounts of money on eradication, substitution and interdiction without any great success.

THE BOOM WITHIN THE CRISIS: SOME RECENT EFFECTS OF FOREIGN COCAINE MARKETS ON BOLIVIAN RURAL SOCIETY AND ECONOMY

Kevin Healy

This paper examines some of the recent effects of the foreign cocaine markets on Bolivian rural society and economy. Bolivia, along with Peru, is one of the major coca leaf producers in the world. It is also one of the major centers for the first stages of refining cocaine. The first part of the paper describes the social groups that historically have controlled both coca leaf production and cocaine-refining operations in Bolivia. It identifies the corresponding geographic regions where these activities traditionally have taken place.

A second section examines the wider national context of economic depression which is pushing tens of thousands of Bolivians into coca production and the related lucrative underground drug market. The rapid expansion of coca leaf production and illicit coca paste and base production during the past five years has become Bolivia's boom within the economic crisis.

Following this analysis, a third section presents an overview of the recently expanded involvement in the first stage of cocaine refining and trafficking taking place in the Department of Cochabamba.

The interplay between the coca and cocaine expansion, the national economic context and the regional social structures has led to some characteristics that are both unique and in other ways similar to rural modernization and agrarian capitalism elsewhere in Latin America and the Caribbean. These dimensions and changes are reviewed in a framework of dependency theory and political economy analysis.

The final section of the paper discusses some of the major factors of the Bolivian political context which constrain public attempts to restrict the expansion of drug-related activities.¹

Control over coca leaf production in Bolivia continues to lie with indigenous peasant producers who represent part of an Andean agrarian civilization dating back thousands of years. The present production for both the licit and illicit markets overwhelmingly comes from these peasants' small plots.²

There are 35,000-40,000 coca leaf producers in two areas of the country – the Yungas in the Department of La Paz, and the Chapare region in the Department of Cochabamba. Coca leaf production and marketing from these zones has been legal for consumption by one-and-a-half million coca leaf chewers among the rural population, mostly peasants and miners.



Coca field in the Chapare area of Bolivia.

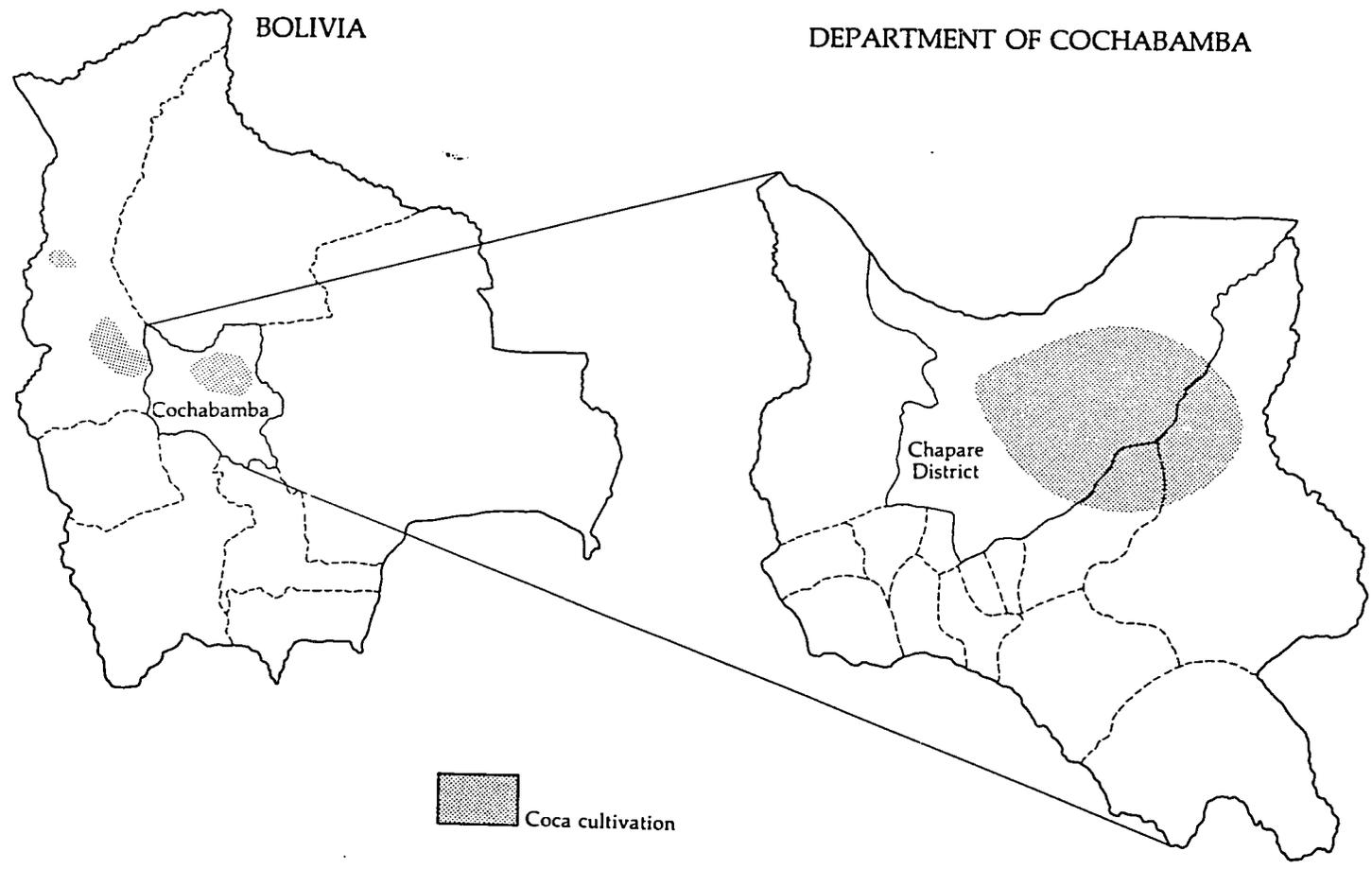
The Yungas zone, by land three hours northeast of the city of La Paz, consists of many steep valleys terraced for coca growing. This area has satisfied the traditional domestic needs for coca chewing since Bolivia's independence from Spain in the early nineteenth century.

The Chapare, a tropical rain forest area in the eastern lowlands of the Department of Cochabamba, is a relatively recent center for coca leaf production.³ Cleared by settlers, the area has expanded in population and agricultural growth during the past two decades. The lowland colonization process represents a component of Bolivia's modernization strategy for the rural sector. The major objectives of the resettlement program were to increase the production of domestic food crops, to tap unused lands, to integrate more farm families into the national economy and to better distribute the rural population (Flores and Blanes 1984:48-50). A public resettlement policy that opened roads and other communications infrastructure triggered both spontaneous and government-directed colonization by highland settler families into the Chapare tropical lowlands during the 1960s. A paved road financed by the US Agency for International Development (AID) in 1971 made a major impact in opening this area to outside colonists and external market forces. As a result, population increased in the Chapare from 26,381 inhabitants in 1967 to 80,000 by 1981 (Blanes 1983) and to 120,000 by 1985 (Centro de Estudios de la Realidad Económica y Social – CERES, unpublished figure).

A 1981 household survey by a Bolivian social research center gives some background on the small farmers producing coca leaf in the Chapare. The survey findings show that most small-scale farmers of the Chapare are former highlanders who resettled and cleared land for food and coca production, and in some cases received land titles from the state (Flores and Blanes 1984). The majority of the families came to the tropical Chapare lowland from the neighboring mountainous Cochabamba Valley which also is in the Department of Cochabamba. Another significant percentage of small holders migrated from the Department of Potosí, one of Bolivia's poorest regions.

BOLIVIA

DEPARTMENT OF COCHABAMBA



Cochabamba

Chapare District

Coca cultivation

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The study indicates that 62 percent of these farmers were without lands in their highland home communities prior to the migration. Of those who possessed land in their home communities, 50 percent owned one hectare or less (Flores and Blanes 1984:99). These figures underscore the poverty levels that pushed numerous peasant families into the expanding tropical coca-growing area in pursuit of improved livelihood during the past 15 years.

Seasonal migration to the lowlands allows highland peasants to complement their low incomes received from underpriced highland cash crops with rural wage labor. The temporary migrant farmers work as wage laborers for the small holders who own or control land, or both, in the Chapare. Some members of this group of temporary migrants eventually resettle permanently to grow coca and tropical food crops on their own, but this change only takes place over a number of years after experience with the slash-and-burn technology.

Highland to lowland labor migration is made easier because the agricultural cycles in these two zones in the Department of Cochabamba are complementary (Weil 1980). The seasons of low and heavy labor requirements are reversed between the Chapare lowlands and the highlands.

Highland peasant migration to the Chapare suggests a variant of the strategy of "verticality" through which ethnic groups sought to maintain access to resources from different altitudinal and climactic zones in the Andean region (Murra 1972, also see this volume). Warm weather crops (such as chili peppers, beans and coca) provide a wider selection of foodstuffs for the highland family. This pattern of transhumance between the upper Cochabamba Valley and the Chapare demonstrates an ancient strategy, widespread throughout the Andes (Lynch 1971,1981).

Data from the 1981 household survey by the Bolivian social research center also demonstrates the strong social and economic ties maintained between the Chapare small holders and their highland home communities (Flores and Blanes 1984:113). Fifty percent of the people surveyed continued to own houses in their hometowns and communities of the Cochabamba Valley, while over half of the small farmers surveyed continued to make investments in their home communities.

The Involvement of Rural Elites in Drug Trafficking⁴

Elite rural groups comprising a social stratum distinct from the coca-producing peasants had almost exclusive control over coca paste production and international trafficking prior to 1982. It was a significant sector of these elites who shaped and benefited from the Bolivian government's rural modernization policies in the decades following the 1952 revolution and who acquired the skills and technology to introduce and consolidate illicit and clandestine cocaine-refining operations in Bolivia during the 1960s. Two principal groups of this economic elite included owners of large cattle ranches and merchants (e.g., exporters of cattle, rubber and Brazil nuts) in the eastern Department of the Beni, and the agro-business elite (whose wealth and income derived primarily from sugar cane, cotton, soybeans,

cattle production, commerce and agro-industries such as sugar and rice mills) in the Santa Cruz region.⁵ Their multiple economic interests now also extend into import houses, banks, automobile dealerships, retail stores and money exchange houses (Gill 1984:100-124).

Although Bolivia experienced a major land reform in 1952, these two groups succeeded in avoiding expropriation of their estates and ranches. A World Bank study implied that the agrarian structure in the vast eastern part of the country continued under the control of these two groups. The study indicated that two-thirds of all Bolivian land was found on private properties larger than 1,000 hectares (World Bank 1978). These properties are not in the Chapare region, however, and do not grow coca, because detection of large production fields would be relatively easy and in some cases because the land is not ecologically suitable for high-yielding coca leaf varieties.

A boom in Bolivian export agriculture (sugar, cotton, soybeans, beef) during the 1960s and 1970s took place on the farms and in the agro-industries of the Santa Cruz group (Gill 1984). This privileged economic minority benefited from favorable pricing, export, credit, marketing and investment policies of the Bolivian state during this period (Gill 1984; Eckstein 1979). US-financed road-building, agro-industrial and land-clearing projects demonstrated strong foreign support for this rural modernization strategy (Gill 1984; Eckstein 1979).

With experience in international export of commodities, such as cotton, in the early 1970s, members of the Santa Cruz elite were positioned strategically to enter expanding illicit international markets for cocaine beginning in the mid-1970s. The logic of the export-oriented agricultural growth of Santa Cruz was the pursuit of quick profits by shifting to the most lucrative crop or processing activity in response to international price changes. Thus the shift in activity for some large operators occurred after the international price of cotton had plummeted during the 1970s. Several years later cocaine prices, fueled by international demand, started to climb and lured producers into this illicit activity.

The cattle ranchers of the Beni department, through various lobbies such as the Asociación de Ganaderos (Association of Cattle Ranchers), also received preferential treatment in terms of agrarian policies and the allocation of scarce financial and technical resources. Since numerous high-ranking military officers were granted land concessions in this department during the 1970s, the Beni elite enjoyed additional support for its modernization benefits through a coincidence of economic interests with this political force (Bascope 1982:91). Having benefited from the rural modernization and state protection of the past two decades, sectors within the Beni and Santa Cruz groups took another step in export expansion, this time to counter the illicit business of cocaine refining and international trafficking (Bascope 1982; Gill 1984; LAB-Iepala 1962).

The Beni and Santa Cruz rural elite families enjoyed a number of comparative advantages which enabled them to seize the lucrative drug-related

opportunities. The ownership of private ranches and commercial farms provided a strong base to exercise both economic and political power over local public officials charged with vigilance functions. Located in isolated and protected areas, the farms' suitability for small aircraft landings and take-offs provided an added advantage. In addition, these powerful elite groups had the means and experience to gain easy access to cheap labor, international business connections and capital for the basic investments in transport, and the infrastructure, equipment and inputs for the clandestine laboratories (Bascope 1982).

A third major group in this drug trafficking power structure was a sector of the Bolivian military which entered the illicit trafficking in the late 1970s and early 1980s under the leadership of Gen. García Meza and Col. Arce Gómez. It must be noted that the armed forces in Bolivia had collapsed during the early 1950s as a result of the social revolution led by popular peasant and miner militias which defeated the army. However, through the counterinsurgency strategies beginning in Latin America in the wake of the Cuban Revolution, massive US military assistance went to rebuild and modernize the demobilized armed forces in Bolivia. In 1964 the military establishment, once again a powerful political force, staged a coup to overthrow the civilian, democratically elected government. The military remained in power until 1978 through a succession of authoritarian regimes. It is ironic that the United States reconstructed a military establishment during the 1950s and 1960s which during the 1970s and 1980s was led by high-level officers who, under a militant anticommunist political platform, pursued illegal drug trafficking to the US.

During the military's 14 years in political power, military officers were able to carve out various economic interests through public land grants, bank credits, and timber and mineral rights concessions from the state, as well as to establish their own private development corporation, COFADENA (Corporación de las Fuerzas Armadas para el Desarrollo Nacional or the Armed Forces Corporation for National Development), and their own bank, the Banco de Progreso. A number of officers within the military received land grants from the military government during the 1970s in the Beni axis of San Javier-San Ramón-Santa Ana-Paraparu (Bascope 1982:90; Dunkerley 1984:317; LAB-Iepala 1982). Under the leadership of Meza and Gómez, with well-organized political protection, private guards, financial resources, outposts, private landing strips and aircraft, trucks and access to abundant cheap labor, this military group, similar to the other two strategically placed elite groups, possessed comparative advantages for seizing the lucrative opportunities of the illicit drug trade.⁶

Together, the three groups – the military and the Beni and Santa Cruz elites – formed the backbone of a civilian-military political alliance which has protected dominant class interests in rural Bolivia for several decades (Dunkerley 1984; Bascope 1982). They have wielded national and regional political as well as economic power during the transition into cocaine refining and international trafficking.

The Bolivian military government that came to power via a coup in 1980 was led by President García Meza and his minister of interior, both of whom had leadership roles in a major national drug smuggling group. This was a case of the military high command using the armed forces and the state to expand its drug trafficking operations. However, even prior to García Meza's regime, the Beni and Santa Cruz elite groups controlled regional governments during the 1970s through such public offices as the *prefectura*, which in Bolivia is the equivalent of a state governor in most countries (Bascope 1982; LAB-Iepala 1982; Gill 1984).

In addition, though on a smaller scale, some coca paste making during the 1970s came under the control of local commercial elites in the small towns of Bolivia, especially in the area of Norte de Santa Cruz. This disparate group also wields power over local officials and enjoys many privileges relative to the peasant majority. Since the early 1970s, the clandestine cocaine laboratories that have been discovered frequently at random sites in towns throughout various Bolivian departments such as La Paz, Tarija and Chuquisaca were seldom under peasant ownership, but rather under the control of local commercial and political elites.

National Economic Context

The rapid rise of the drug economy in Bolivia is explained in part by the fact that during the past five years Bolivia has been caught in the worst economic crisis of this century. According to World Bank figures obtained from the Central Bank of Bolivia, the gross national product dropped 17 percent between 1980 and 1984. A national debt crisis has contributed significantly to this deterioration. National debt repayments have fueled a crisis with multiple effects throughout the economy. The national debt in Bolivia is \$4.5 billion, while the gross national product is \$2 billion. Bolivia's heavy debt servicing requirements deprive the state of significant foreign exchange for other imports and for national investment in productive sectors.

Since 1980, the country has been using 25-30 percent of its export earnings for debt servicing to international banks. If Bolivia were to pay off both its capital and interest owed in 1985, it would have to use its total export earnings for that year. These conditions led Bolivia in May of 1984 to declare a moratorium to a consortium of private banks.

Bolivia's inflation was 297 percent in 1982, 328 percent in 1983 (*Informe 'R'* 1984), 2,177 percent in 1984 (Central Bank of Bolivia, personal communication) and about 11,750 percent in 1985 (Inter-American Development Bank, personal communication). The hyperinflation during 1984 and 1985 is also among the highest rates anywhere in the world. For imported goods, this inflationary spiral is even higher. In a peripheral, dependent economy, such as Bolivia's, which imports an abundance of basic goods for the low-income population, skyrocketing inflation is critical.

One example of the effects of this inflation is the unaffordable prices of basic medicines and the raw materials to make them. During 1983 and 1984

their prices increased 5,000 to 6,000 percent, making many medicines inaccessible to a large majority of the population. A national pharmaceutical firm saw its sales drop from \$10 million annually to \$1 million annually in the space of four years (personal communication). In some geographic areas this phenomenon has caused citizens to return to or begin using herbal remedies, traditional resources of Andean society. The Ministry of Health and the Faculty of Medicine of the National University have given official, moral support for the return to native Andean medicine.

Recently, the Ministry of Commerce and Industry announced the closure of 8,000 small enterprises and 28 medium-sized bankrupt industries. These closures are perhaps only the tip of the iceberg, since a large part of the urban labor force, not included in the official economic statistics, comprises an informal sector and suffers the devastating consequences of the deepening economic crisis.

Bolivians are rapidly becoming poorer not only as a result of rising unemployment, the collapse of national production and hyperinflation, but also because of the tremendous drop in the value of the peso, the country's official currency. Between 1982 and August 1985, the peso has been devalued from 25 pesos to the dollar to 1,000,000 pesos to the dollar. As a result, the country's third major import item during the past year has been paper peso bills, printed in West Germany, Brazil and England. Bolivian salary earners no longer deposit their currency in the national bank system, but prefer under these unusual circumstances of chronic devaluation to convert pesos to dollars on the black market in an attempt to protect their money from eroding in value. In mid-1985, the value of a peso could be halved within several weeks' time because of the runaway rate of currency devaluation.

Official government figures show that in addition to declining export revenue, the tax revenues the government collected in 1983, in real terms, were merely half of those collected in 1981. In 1982 the national treasury, whose income is based upon taxes, royalties, interest payments and customs duties, was able to cover 80 percent of public expenditures. By 1985 the national treasury income covered only 18 percent of these same expenditures.

This national economic decline also affects the consumption of mass communications by the population. Newspaper reading, a basic societal institution, is in rapid decline. Circulation for *Presencia*, Bolivia's major daily, has fallen from 40,000 to 10,000 during the past few years (member of *Presencia's* Board of Directors, personal communication). The low-income rural and urban sectors have reduced their broadcast media consumption. Radio stations throughout the country, aware of the massive drop in the number of listeners, receive complaints from peasants and the urban poor that they can no longer afford to purchase transistor batteries. (In one neighborhood in La Paz, residents received national news several times a week over a public address system set up by a local Catholic parish.) A decline in the use of radios represents a drop in the quality of life for the low-income population which partially depends on radio for entertainment, news and essential

communication among rural communities and between the countryside and the cities.

Tin production, the backbone of the Bolivian economy since 1880 — although natural gas replaced it during the 1970s as the leading official export — declined by 30 percent between 1980 and 1984 according to figures the World Bank obtained from the Central Bank of Bolivia. During this same time the world market price fell by 27 percent. The low international prices, combined with low mining productivity, no longer cover production costs in the state-owned enterprise (the National Bolivian Mining Corporation, COMIBOL), the country's principal producer. Production in the mining sector has fallen to output levels characteristic of the economy fifty years ago.

Mine worker wages have dropped to a level that fosters widespread theft of the state mining company's ore for sale on black markets (residents of San José, Siglo XX, Huanuni and Viloco mining towns, personal communication). In many of the COMIBOL state mines ore is being lost in this way. These mines operate under a co-management hierarchical structure comprised of union leaders and government representatives. Thus individual miners, driven to theft to prevent further decline in their individual income and consumption levels, feel compelled by economic necessity to undermine their own enterprise and future economic prospects.

Compounding this national economic deterioration was a natural disaster during the 1982-83 growing season in the mountainous areas of Bolivia where the bulk of the rural population resides and suffered one of the worst droughts of this century. Due to land fragmentation, heavily eroded soils, low prices for cash crops and meager state support for agricultural development, Bolivian Andean peasants are already among the poorest of the world's rural populations. The drought drastically reduced even further, and on a national scale, the availability of staples of the Bolivian diet such as potatoes, corn and barley, and caused a major drop in farm incomes for subsistence families. In many highland departments, a large part of the livestock population, especially cattle, sheep, llamas and alpacas, died from lack of forage. (In the Andean region indigenous people raise a few animals as a capital reserve fund for times of crisis.) The massive loss of livestock has pushed poor Andean families to the edge of survival by wiping out this form of subsistence insurance.

Under pressure from growing food shortages, the rural population in some areas was obliged to consume its seed, which otherwise could have been planted the following season for food. A resultant loss of traditional varieties no doubt will cause serious setbacks to the Andean agricultural system. The drought also caused major social dislocations through an exodus of male and in some cases female peasants seeking wage labor employment or land for growing food quickly in other departments in Bolivia and neighboring countries such as Argentina.

In their evaluation reports, drought relief agencies concluded that it would take Andean farm families until 1989 to return to the subsistence

levels of 1981, assuming normal annual yields (national director of a private drought-relief and recovery program, personal communication).

Bolivia has emerged from this crisis period with the highest infant mortality rate (213 per 1,000) and the lowest life expectancy (47 years) of any country in Latin America or the Caribbean (De Mott 1985). Since 1980, per capita consumption has fallen by 30 percent and family income by 28 percent (Morales 1985). The national income average for peasant families is \$160 per annum (*Presencia* 1986). Eight percent of the Bolivian population has migrated from the country between 1983 and 1985 (*Presencia* 1985c).

In the United States a rising demand for cocaine has paralleled Bolivia's national economic depression. This demand is estimated to have increased steadily during the 1980s. According to the Drug Enforcement Agency, estimated cocaine consumption was 34-41 metric tons in 1981, 45-54 metric tons in 1982, 50-60 metric tons in 1983, about 85 metric tons in 1984 and 100 metric tons for 1985 (*The New York Times*, 8 August 1985). Simultaneously, the rapidly increasing unemployment and impoverishment of the Bolivian work force made the comparatively high income opportunities associated with the coca leaf and cocaine boom extremely attractive for the disadvantaged social sectors.

These economic changes have had significant repercussions on national employment and income. Bolivia's rapidly expanding drug economy has incorporated an estimated five percent of the country's population, the highest percentage engaged in such activity for any country in the world (Lee 1985). In Bolivia, this segment of the population which gains part or all of its income from coca and cocaine-related activities is larger than that employed by the mining and manufacturing industries combined.

Those now dependent on the drug economy are individuals whose diverse occupational categories include the coca leaf cultivator and his hired agricultural labor; truck owners and truckdrivers; small aircraft owners and pilots; wholesalers; transporters and retailers of the coca leaf and its derivatives; owners of the clandestine laboratories and their chemists; armed guards of the air strips, transport vehicles and laboratories; the *pisadores* (laborers who work in clandestine laboratories crushing coca leaves); and the national and international traffickers. The traffickers also include those engaged in the processing, transporting and marketing of the materials used in the cocaine-refining activities.

The illicit cocaine revenues, now totaling several billion dollars a year, exceed that of any of Bolivia's major exports, including tin. It is estimated that \$486 million of this amount flows into the Bolivian economy (*Presencia* 1986). Even at the local level in Bolivia, there have been times during the past five years when a pound of coca leaves had twice the value of the same quantity of tin on the world market.

The Boom of Illegal Coca Paste Making in Cochabamba

During the past four years, perhaps no other area of the country felt the combined impact of foreign demand for coca and national economic

deterioration more than the Department of Cochabamba. In particular, the relocation of the centers of the first stages of cocaine refining and the participation of new entrepreneurial social groups in the illegal activity had major repercussions upon Cochabamba's regional economy. For the first time, coca paste and base making on a large scale began within this department, beginning in the Chapare colonization zone and extending later to the upper Cochabamba Valley near such market towns as Tárata, Cliza, Arani and Punata. This section explores the evolution of this rapid series of changes and discusses in greater detail various dimensions of the illegal drug boom in Cochabamba.

The spread of cocaine refining on a major scale through the Chapare also was abetted by the national political changes in Bolivia during 1982, when the country moved from military to civilian, democratically elected rule. This political change represented the fall from political office of one of the major drug trafficking groups led by Gen. García Meza and Col. Arce Gómez, and created an opening in the control over the first stages of cocaine refining, allowing for the entry, on a large scale, of the Cochabamba peasant and small- and medium-scale merchant (Flores and Blanes 1984).⁷

The owners of the newly created clandestine laboratories in the Chapare included traffickers from the Beni and Santa Cruz areas (who used the single paved roadway and some 400 hidden airstrips in the Chapare for their aircraft). In addition, peasant coca leaf producers who were more economically secure had begun to make the illicit coca paste. In effect, the nation's return to political democracy coincided with, and in a secondary, indirect way contributed to, greatly increased peasant economic participation in coca paste processing in the Department of Cochabamba.

The official government response to these developments in Cochabamba was a military occupation of the Chapare in August 1984, when 500 Bolivian troops were sent to destroy the laboratories and to arrest the drug traffickers. According to official government statements, between 20,000 and 25,000 people fled from this zone (*Presencia* 1984). The military operation was not successful in apprehending the traffickers, but was perhaps more successful at least temporarily in the reduction of coca paste making in the Chapare itself.⁸

Ironically, however, the military operation appeared to have a contradictory effect — it pushed a major part of the illicit processing activity out of the Chapare into the upper Cochabamba Valley, from which many had migrated to settle and grow coca in the Chapare. The spread of this cocaine production perhaps was inevitable, given the tremendous demand for cocaine in the United States and the emergence of coca paste making on a large scale in the same department. Nevertheless, the military occupation appeared to have accelerated the shift of illegal cocaine production to a new field of operation. Subsequently, both in the Chapare and the upper Cochabamba Valley, areas traditionally dominated by small farm agriculture, coca paste and base making proliferated on a large scale (*Los Tiempos* 1985e, 1985h).⁹



Peasants prepare bags of coca leaves for transport.

The Chapare region coca leaf price boom has led to rapidly increased cocaine production over the past seven years. It is the only small farmer crop in Bolivia to have kept pace with the runaway inflation rate. Official figures show that between 1978 and 1983 the total land in coca leaf cultivation in the Chapare increased from 13,800 ha to 58,000 ha (Centro de Estudios de la Realidad Económica y Social – CERES, unpublished figures). The total coca leaf production in the Chapare region climbed from 35,000 metric tons in 1978 to 152,000 metric tons in 1984, and estimates for 1985 reach 171,000 metric tons (*Presencia* 1985a).

The Chapare coca and cocaine boom also led to the rise of new commercial hubs such as Shinahota, Paracti and Ivigarazama. They have been dubbed by the local media as independent "*Republiquetas Pichicateras*" (Drug Republics). Beginning in 1982, the outdoor markets of these towns openly sold coca paste and material for processing it. In an ambience of a makeshift, frontier-style setting, foreign and national drug traffickers became more powerful in the Chapare than local law enforcement officials and public office holders. Prostitution quickly became part of this setting and arms trafficking emerged on a significant scale. The security re-



Women sell leaves in a rural market.



Armed transporter of cocaine paste to traffickers.

quirements for the new laboratories and expanded trafficking of the Chapare brought the growing need for armed guards with firearms such as submachine guns, Mausers and rifles.

The magnetic pull of economic opportunity has brought to the Chapare male and female peasant colonists, agricultural laborers, sharecroppers, unemployed youth, construction masons, petty merchants and traders from the departments of Oruro, Cochabamba, Chuquisaca, Santa Cruz and Potosí, along with the well-financed trafficking groups from the Santa Cruz and Beni departments.



Unemployed youth pour into the Chapare area to seek employment as pisadores.

One measure of the scale of the economic activity is the movement of goods and people between the Cochabamba Valley and the Chapare. During 1981, there were 29,000 vehicles and 400,000 persons who traveled in and out of the zone (Flores and Blanes 1984:141). This included many peasant small holders who traveled directly with their produce to market in Cochabamba. After national economic conditions continued to deteriorate and the emergence of paste making began in the Chapare in 1984, between 5,000 and 7,000 youths between 14 and 19 years of age from Cochabamba were taking public transportation weekly to the Chapare to seek employment as pisadores in the clandestine laboratories (*Los Tiempos* 1985c).

Flores and Blanes' study implies that the peasant coca producer enjoys the highest income among the small holder class in Bolivia. This implication is confirmed in the Chapare by the small holder's ability to keep pace with runaway inflation through the sale of his cash crop. The rapidly rising price of the coca leaf effectively maintains the purchasing power for these peasant families in weekly market transactions. This is not the case for other peasant-produced cash crops whose terms of trade have worsened during the past 15 years, and especially during the hyperinflation of recent years.

One measure of the increased income, purchasing power and peasant consumption preferences is truck sales. During a six-month period in 1981, 300 large trucks were purchased by peasant small holders in the Chapare

(Flores and Blanes 1984:90). Bolivian peasants consider trucks a means for upward mobility: ownership brings both social status and a way to escape from reliance on farming as a way of life and precarious means of support. No other small-scale farming population in Bolivia has demonstrated such a surge in purchasing power during the national economic strife.¹⁰

Income from coca production has been used for land and housing investments (Flores and Blanes 1984:190). Such income also is used to buy durable imported consumer goods (e.g., wrist watches, refrigerators, stoves, motorcycles, radios, bicycles and other products previously considered "luxury items," such as canned beer and imported L&M brand cigarettes) and speculative purchases that have little impact on national production (Flores and Blanes 1984).

The Cochabamba peasant farmer and merchant classes are known throughout Bolivia for their entrepreneurial and mercantilist skills. The peasant farmers are also known for their strategies to diversify crops as well as the sources of income and nonfarm employment (Dandler and Anderson 1982). Both groups play conspicuous roles in commerce, transport and trade throughout the urban areas and small towns in all of the Bolivian departments. A major part of the elementary cocaine refining activity moved into the Cochabamba Valley through these farm family and household networks and commercial circuits.

The Department of Cochabamba's regional economy is characterized by a vast network of small-scale, family-run enterprises in trade, commerce and production and a mosaic of local fairs and market towns. Self-employment and family survival strategies are the rule. Large-scale capitalist firms are not a significant part of this economic profile. Only a very small percentage of the labor force is employed in industrial production (Laserna 1984:187-191). Since 1984, the proliferation of clandestine laboratories has taken place in the urban areas and upper Cochabamba Valley through these fine-grained commercial channels employing tens of thousands of people.

This self-employed, low-income labor force is highly adaptable, responding to changing regional conditions and new economic opportunities. Transporting, wholesaling and retailing raw materials for cocaine refining has become a highly profitable activity for this sector in Cochabamba. Recent drug expansion created employment opportunities for thousands of small-scale merchants and peasants, especially women.

Commerce in kerosene, an essential input for coca paste making, is a case in point. It is produced by the state oil monopoly, Yacimientos Petroleros Fiscales Bolivianos (Bolivian Public Oil Company). The increased illicit demand for this product has created a black market with speculative prices and opportunities for significant profits. According to recent reports, Yacimientos inadvertently furnishes 10,000 liters daily for the Department of Cochabamba's drug industry (*Los Tiempos* 1985j). Since Bolivian urban and rural households use kerosene as cooking fuel, police control over its distribution to cocaine factories and traffickers has proven difficult. In an



Peasants unload chemicals necessary for coca paste manufacture from crates. The drug trafficking has created a booming kerosene industry and trade.

effort to curb this traffic, the Bolivian government has set the maximum purchase per customer at five liters per day. The use of coupons regulates these purchases.

During May 1985 one liter of kerosene cost 5,000 pesos when purchased at Yacimientos outlets. This quantity could then be resold on the black market in the same city for 100,000 pesos (*Los Tiempos* 1985j). Another petty merchant would then take the same liter to resell in the upper Cochabamba Valley or the Chapare for 200,000 and 300,000 pesos (*Los Tiempos* 1985j).

The middlemen engaged in these buying and selling transactions are typically self-employed and fully dependent on the sale of petty commodities for their livelihood. The profitability of kerosene commerce has caused a massive switch to the sale of this product. Thus women, and men willingly stand in long lines for numerous hours each day to obtain an allotment of five liters of kerosene to begin their comparatively profitable commercial endeavor. The kerosene commercial sector has ballooned in size in recent years because of the rapidly rising demand for this basic input from the cocaine industry within Cochabamba.

On a smaller scale, the transport and commerce of sulphuric acid used for sulphate base in cocaine refining is having similar effects. Privately owned

sulphuric acid plants are now found in the cities of Oruro and Cochabamba. The regional offices of the national narcotics control agency, La Oficina de Control de Substancias Peligrosas, has responsibility for controlling and regulating the distribution of this product. These offices grant coupons to legitimate sulphuric acid users, such as private and public mining concerns and electrical workshops.

However, numerous mines no longer have significant needs for sulphuric acid because of the drop in their production levels. In addition, the electrical workshops eligible for these allotments sometimes function as front organizations in order to obtain the acid and traffic it in the commercial networks connected to the clandestine laboratories. Workers and employees of the Bolivian sulphuric acid industries also appropriate these products themselves for sale via these illicit commercial circuits. Moreover, the narcotics agents themselves engage in the illicit traffic since it has become relatively easy for them to participate in this highly profitable activity.

Sulphuric acid is also smuggled into Bolivia from neighboring countries such as Chile, Argentina and Paraguay. These smuggling operations generate income and employment benefits for transporters (usually truck owners and chauffeurs), border guards and customs officers (by way of payoffs and bribes) at the border crossings and subsequently at the checkpoints along the major truck routes in the country's interior.

The basic paste-processing inputs also include toilet paper, which is used as a filter and drying material. The need for toilet paper in the paste-making process has created somewhat of a boom for this national industry, whose factories are located in the cities of La Paz and Santa Cruz. Newspaper accounts indicate that 60 percent of the national toilet paper production now goes to the Chapare for use in the cocaine industry (*Los Tiempos* 1985k). The Bolivian government estimates that 2,000 people (also from the low-income, self-employed occupational category) make their living in the transport, commerce and trade of toilet paper.

In urban Cochabamba, a roll of toilet paper costs 110,000 pesos and in the Chapare this roll costs 1,000,000 pesos (*Los Tiempos* 1985k). The arrival of truckloads of toilet paper for the small towns of the Chapare is a daily phenomenon. Many former coca leaf buyers and sellers have entered this lucrative toilet paper trade between Cochabamba and the Chapare (*Los Tiempos* 1985k).

Petty employment in buying, transporting and selling coca leaves for licit as well as illicit markets has been a traditional occupation for many Bolivians living at subsistence levels. In 1982, when the military government authorized any person to purchase and transport up to five pounds of the coca leaf, there was a daily movement of 500 vehicles and 15,000 persons into the Chapare. The subsequent problems from the traffic jams and outflow of coca leaves prompted the government to suspend this policy (GOB 1984).

In recent years, in an effort to curb that quantity which flows to the illicit markets, the Bolivian government has granted licenses to these small-scale,



Coca leaves are distributed under the supervision of public authorities.

commercial agents. However, a disproportionate number of these licenses have been made available to middlemen from the Department of Santa Cruz, where licit coca leaf consumption is less than in five other Bolivian departments. Santa Cruz has five times more wholesalers than any other department (GOB 1984).

The distribution of the coca leaves to the upper Cochabamba Valley, Santa Cruz and Beni continues despite an ever-growing share that remains for the Chapare's rapidly proliferating cocaine industry. Nonetheless, government regulation continues to prove difficult for coca leaves transported to these other centers of paste production, such as the upper valley. The government agents at the regional offices for licensing frequently receive bribes, as well as pressure from family and friends to continue issuing licenses as personal favors. To meet the rising demand by Bolivia's poor to participate in this illicit economic activity, licenses continue to be issued, simultaneously yielding the "spillover" benefits to the authorized public employees who distribute them.

However, legal restrictions such as these also create the conditions for middlemen, termed *sepeadores* or *sepes*, who are organized into small traveling groups of 10-20 individuals by local drug trafficking bosses, or *matobenes* (*Narcotráfico y Política II* 1985:130). (Matobenes supply leaves directly to the clandestine factory owners.) The *sepe*, whose name signifies "ant" in a Bolivian Indian language, is another example of a subsistence-



The expanding rural trade in the Chapare region draws growing crowds.

based transporter trying to survive the economic national crisis with illegal employment. As hired laborers, the *sepes* transport 50-pound bundles of coca leaves on their backs down hidden jungle trails.

Previously, this trek was made primarily to such areas as Rio Ichilo in the Norte de Santa Cruz area, a principal cocaine production center. The distance was 80 km and the trip would last three days and nights. The proliferation of the paste-making phenomenon in the upper Cochabamba Valley has led to the use of 50 new trails from the Chapare by the *sepes* (*Opinión* 1985a).

Sepes are often unemployed and underemployed individuals in the urban working class or peasants with no land or an insufficient amount of land. On coca-carrying trips, they risk confrontation with armed traffickers, bandits, police and the rigors of a humid tropical climate and treacherous river crossings. If apprehended by government authorities, they face arrest and imprisonment. Reflecting these risks, their earnings are superior to those derived from the meager legal employment opportunities.

Many petty middlemen (usually female) and merchants are drawn to the Chapare because of the cash flow from the drug trade which has opened a huge market and produced notably higher prices for various consumer products ranging from food and clothing to imported electric household items and vehicles.¹¹ These mobile middlemen transport products from many regions of the country to the Chapare, since the income they obtain



Peasants in the Chapare display their new consumer goods.

from their sales in the Chapare cannot be made elsewhere even after deducting the relatively exorbitant transport costs.

Coca paste consumed within Bolivia is distributed by middle-class youth (commonly university students) called *bolлерos*, who take the paste from the production centers to the large and growing youth market in the major cities (McFarren 1985). Over the past few years, a drug culture among Bolivia's youth has emerged in which the coca paste is mixed with tobacco to make a type of cigarette called a *pitillo*. The recent decrease in price of coca paste due to its increased supply has contributed to the growing pitillo market. As a result of the recent expansion of the industry and the commercial availability of great quantities of pitillos on street corners, in schools and social gathering places, Bolivia has become a drug-consuming nation as well as a drug-producing one.

One example of changes in traditional commercial roles occurred among many manufacturers of *chicha* (corn beer), which is the favorite regional drink of the Cochabamba rural population. *Chicheras*, who manufacture and sell chicha, number in the thousands and are preponderantly Quechua-speaking women either from small farms or market towns. Many in the upper Cochabamba Valley have responded to the new economic opportunities by using chicha-producing facilities to manufacture coca paste (*Los Tiempos* 1985e): their large distinctive clay jugs previously used to transport chicha are now being used to store coca paste. Not surprisingly, the production of



Peasant pisadores take a meal break from cocaine processing activities in a Cochabamba market town, 1984.

chicha simultaneously has declined, thereby depriving the regional government of Cochabamba of critical tax revenues derived from the trade of this popular drink (*Opinión* 1985b).

One example of an urban commercial group that has increased its involvement in the production of paste and in drug trafficking in recent years is a group of some 500 unionized food vendors in the central market place of urban Cochabamba. According to a US-based researcher, during the national economic crisis, the sales of their legal, traditional products have dropped by 30 to 50 percent (anonymous communication). These vendors have entered the drug business en masse as individual families, using their market skills developed within this region to participate in the new boom. Their entry into this illicit business was facilitated by previously existing commercial linkages to the Beni region.

The most well-known job that is drawing people from the impoverished rural and urban areas in other departments besides Cochabamba is that of the pisador or *pisacoca* (coca leaf stomper) who works in the clandestine laboratory. Individuals from departments most affected by the drought of 1983-84 often migrate to the clandestine laboratories to work as pisadores for periods as short as a week to a month at a time. The pisadores are often poor and young male peasants who seek the relatively high wages (four times that paid for agricultural labor in coca production and eight to 12 times more than wages paid for other crops in the upper Cochabamba



A small cocaine processing plant.

Valley and other regions during August 1985) to engage in the all-night process of crushing dried and soaked coca leaves. Data from health and agricultural professionals in the Norte de Santa Cruz area demonstrates that peasants from this area and social strata are participating as seasonal pisadores.

The coca paste-making process resembles a quasi-ritualized atmosphere. Over the course of their 12 hours of night-time work, the pisadores become animated as they "dance" on the leaves to the accompaniment of piped-in traditional regional music (usually from their home areas such as Norte de Potosí). To further arouse positive work spirits for the tedious routine, the pisadores are encouraged to consume large quantities of chicha and coca paste, which sometimes are mixed together in an unusual and potent concoction.¹² Moreover, they are often promised a special chicken dinner in addition to the relatively high wages – meals are an extremely important incentive for poverty-stricken Bolivian rural wage earners.

Although young peasant women usually do not work as pisadores, they too are flocking to the Chapare region for relatively well-paying jobs. These include cooking for the cocaine-processing laboratory work force and for the agricultural laborers in the coca fields, picking coca leaves during the continual harvest, distributing the chemical inputs to the cocaine-processing laboratories and in some cases, even engaging in prostitution.

In the Cochabamba Valley, underpaid public employees also find the il-

legal coca and cocaine boom an economic alternative to their declining conditions amidst the national crisis. Earning only about \$20 a month, policemen and judges, who are supposed to control drug related activities, become very vulnerable to bribes and payoffs and opportunities for direct involvement in coca paste-making and trafficking. The police, perhaps more than any other public institution in Bolivia, are experiencing the corrosive and corruptive influence of drug trafficking.

In urban Cochabamba it is extremely difficult to find maids, gardeners and construction masons because most of these workers have sought the illicit income benefits in the upper Cochabamba Valley and the Chapare. Even local public employees such as rural schoolteachers in the upper Cochabamba Valley have apparently made a massive entry into the lucrative coca paste-making business. One Bolivian police report indicated that 70 percent of the schoolteachers in the region, whose monthly salaries during the end of 1984 averaged \$15-\$20, were working in cocaine factories (*Los Tiempos* 1985b). Their involvement even brought rural schoolchildren to work in the underground *pisando* economy (the activity involving stomping with feet on the coca leaves) and as transporters to towns where the drug deals are made (*Los Tiempos* 1985b). Even the army has felt the acute labor shortage among youth. In 1985, for the first time a local regiment was unable to enlist volunteer recruits in the city of Cochabamba. This unusual dearth of volunteers compelled them to coercively recruit 15-year-olds off the city streets to fill their annual quotas of new soldiers.

In the Chapare itself, junior and senior high schools, under the auspices of Jesuit educational organizations, *Fe y Alegría*, reported an unprecedented number of dropouts during the 1983-84 school year. These dropouts, all between the ages of 12 and 15 years, were presumed to have entered the coca labor market as *pisadores*. This phenomenon was equally true for a Canadian-financed agricultural technical school in the Chapare whose student enrollment dropped from 35 to seven in recent years.

The communities of Ccotos and Yapura offer an example of the transformation of a local economy and a rapid response by an impoverished labor force to the arrival of coca paste-making into the upper Cochabamba Valley. The peasants from these two adjacent communities specialize in pottery that is bartered or sold to other peasants at rural fairs. They also tend to farm small fields of wheat and potatoes in order to produce some of their basic staples.

Ccotos specializes in making large clay jugs for holding chicha and Yapura produces clay cooking pots that are fire resistant. Both communities have practiced this market-oriented specialization for numerous generations and acquired a special reputation and role in the Department of Cochabamba. In recent years, however, both communities have suffered shrinking markets and runaway inflation. They both have also experienced strong economic setbacks from the drought of 1982-83, having lost their crops, which provided food and extra cash for the year as well as seeds for future planting. In short, during the 1980s, the residents of these two rural com-

munities have experienced a major decline in their already low standard of living.

In December 1984, members of these communities began to set up facilities for coca paste making. By January 1985, production was in full swing and included some 90 adult and 140 teenage males as pisadores. One former potter, after five months' work (probably both as trafficker and pisador), had enough cash to make a large downpayment for the purchase of a new truck worth \$25,000.

During this same period of new economic endeavors, the two communities, for all practical purposes, abandoned agriculture (as well as local Andean festivals associated with the agricultural calendar), and making pottery became a minor activity practiced occasionally by women.

Dependency and Political Economy Analysis

To further refine this socioeconomic analysis, the following section will address some important questions about Bolivia's rapidly expanding drug economy within an analytical framework used in the social sciences in recent decades. The dependency and political economy analytical framework developed for understanding underdevelopment in Latin America is helpful for examining various aspects of the phenomenon of recent rural economic growth in Bolivia.

The distinguishing feature of dependent (as contrasted with interdependent) development is that growth in dependent nations occurs as a reflex of the expansion of the dominant nations, and is geared toward the needs of the dominant economies, i.e., foreign rather than national needs. In the dependent countries, imported factors of production (e.g., capital and technology) have become the central determinants of economic development and socio-political life (Bodenheimer 1971:155).

In comparison to many documented cases of the rapid expansion of commercial agriculture in Latin America over the past three decades, the recent modernization process in Bolivia shows some surprising departures from the common pattern. This framework of analysis leads to some interesting findings that throw light on why the coca and cocaine business has such great appeal for many low-income Bolivians. It also leads to an analysis of the business' extraordinarily high social costs for the same low-income population and for the rest of society.

Despite its overwhelmingly negative impact on Bolivian society and economy in general, the agricultural "modernization" led by the coca and cocaine boom, at one level of analysis, does not appear to have some of the particular detrimental effects on peasant farmers and rural wage workers which are commonly reported in rural development literature.

Bolivia's expansion of coca cultivation and cocaine-refining operations stems from foreign demand; in that sense, it is "development propelled by external forces" rather than derived from forces reflecting the internal needs of society's majority, most of whom are poor. This conclusion is consistent with classic dependency theory. However, one difference in the recent Bolivian case is that in the Chapare and Yungas regions, farmers control the raw

material within an economic structure of small-plot agriculture. This point appears to contradict the theory that treats peasant farmers as passive and manipulated "masses" victimized by a dependent development process. This theory posits that the key actors in dependent development analysis, in addition to the state, are the oligarchies and the national and international bourgeoisie (Gereffi 1983:38).

In an unusual development by Latin American contemporary historical standards, during the rapid commercial expansion of cocaine during the past eight years, Bolivia's peasant farmers have retained control over the production of the raw material used to manufacture this illegal international commodity. Historically in Latin America, during periods of extensive agricultural growth, modern capitalist farms emerge and expand, usually at the expense of peasant producers who, in a variety of ways, are forced off their plots and converted into landless wage laborers (de Janvry 1981:152-153).

The literature on development also shows that low-income peasants migrate seasonally to the commercial boom zone from impoverished areas and provide the large quantities of temporary labor necessary for the expansion of coca production to take place. These agricultural laborers earn low wages which are subsidized during the remainder of the year by the food they grow on their subsistence plots. Therefore, low wages and low prices for crops sustain a subsistence equilibrium to the benefit of other larger economic interest groups (Gill 1984:22-23).

Under other more common development patterns of rapid agricultural growth, commercial farms also have a tendency to rely on imported petrochemical inputs, capital equipment and institutional bank credit (Pearse 1980). The Chapare has not become a platform for large-scale commercial production units where corporations or commercial farms own and control the supply of raw materials. Large economic interest groups have not acquired lands in the Chapare and employed capital-intensive mechanization or production strategies for coca cultivation. In part this is true because the land is not suitable for large-scale mechanization in plantation-style agriculture. The elementary stages of coca paste and base processing which, prior to 1982, were almost exclusively in the hands of Bolivia's economic rural elite, now, in part, have shifted to include peasant producers and small-scale merchants and middlemen in the upper Cochabamba Valley.

This peasant-led agricultural production boom in the Chapare also suggests that the income benefits are more substantial both for producers and agricultural workers than in the more common patterns of rural modernization in Latin America. For example, the remuneration rural agricultural laborers, migrant sharecroppers and *pisadores* receive is relatively greater than the customary wages large commercial farmers offer elsewhere in Bolivia and in Latin America. In Bolivia these rural wages are even higher than average wage levels in urban areas.

Those now benefiting from the relative abundance of cash in the countryside include the poorest mountain farmers in the country, whose

livelihood is threatened by hyperinflation and drought and who migrated to the Chapare for land and wage labor opportunities. My observations in Bolivia suggest that this social strata of the rural population is responding to the widening job opportunities as pisadores in the coca paste making in the upper Cochabamba Valley.

Another atypical feature of this Bolivian "modernization" process is that the technology to produce the coca leaf does not depend upon imported petro-chemical-based fertilizers. In marked contrast to "green revolution"-based rural economic growth, coca leaf production requires only simple hand tools (Pearse 1980).

Fine-tuned over millennia to the Andean ecosystem, the coca leaf is, indeed, a "wonder crop" (see Plowman this volume). In the Chapare it grows relatively well on poor soils, has few problems with blight and pests, yields four to five harvests annually and offers a much higher and more stable economic rate of return from land and labor investments compared to any other Bolivian cash crop in the highlands or lowlands. With a life expectancy of 18 years, the plant's lightweight leaves and nonperishable quality keep transport costs low.

Similarly, coca paste making is a labor intensive activity which provides employment for a sector of the poorest of rural and urban populations. Production materials such as kerosene, toilet paper and sulphuric acid are produced locally in Bolivia. In addition, the technology is simple, easy to master and provides peasant farmers additional benefits from their land and labor investments for their basic agricultural production.

Elementary cocaine refining is an agro-industry that requires only rudimentary infrastructure and no large investments. Cocaine can be manufactured in the back of a truck, in an adobe hut or even in the middle of a cane field. Recent developments in the Chapare and the upper Cochabamba Valley indicate that the physical requirements of this technology can be diffused quite rapidly to the rural producer and throughout the small- and medium-sized merchant population. This is evident from the explosive expansion of the paste-making and trafficking activities in both the Chapare and the upper Cochabamba Valley between 1982 and 1985.

There are other drug-related economic activities that have an impact on employment. The production, transport and sale of such items as kerosene, toilet paper and sulphuric acid, which are key inputs for the coca paste making provide many employment opportunities (*Los Tiempos* 1985f). Among the direct beneficiaries from these activities are sulphur miners and transporters (truck owners) of raw sulphur; employees of sulphur plants; and owners of sulphuric acid industries and commercial wholesalers, retailers and transporters of sulphuric acid and kerosene. For example, Yacimientos Bolivianos Petrolíferos, the state-owned oil company, receives income and production benefits from the expanded demand for kerosene, which is a national product. A major sulphur mine and sulphuric acid plant is under the ownership of the Bolivian military.

In addition, as mentioned previously, hundreds of poor rural public officials engaged in corrupt practices as part of their family survival strategy reap "spillover" economic benefits from the coca and cocaine boom. Many Cochabamba lawyers have also received substantial economic benefits of this type. Goods and services sold to people with surplus cash derived from coca and cocaine activities provide additional economic spillovers. For example, owners of small buses can net more than \$100 a day for a single trip transporting passengers to the Chapare.

It is important to recognize, however, the negative aspects of this dependency (and political economy). Bolivian areas affected by the production of coca and cocaine fall into the classic pattern in which internal economic relations are restructured in response to external markets in a number of ways that are detrimental to the majority of the population. The new structure of economic relations supports a non-food crop for export instead of the internal social and economic needs of most Bolivians. The economy and society develop an internal structure heavily dependent on high prices in the industrial consumer nations for this commodity. Bolivia's fortunes rise and fall with international price swings. Since cocaine is an illicit product, the usual foreign exchange earnings, along with the normal tax revenues which derive from export-oriented growth, are lost to the state.

This outward-oriented development pattern also distorts the allocation of scarce production needs (land, labor and capital). Evidence indicates that the trend in the Chapare is toward small-scale monoculture (Flores and Blanes 1984). Because of its powerful economic incentive, coca production is rapidly replacing production of food crops (rice, bananas, maize, pineapples, yuca and citrus). Rather than use its land and labor to grow food, Bolivia is focusing agricultural production on what has become a raw material for an illegal luxury commodity consumed by foreigners or, even worse from the dependent countries' standpoint, a harmful product consumed by Bolivian youth or low-income male workers engaged in the paste making. The increase in coca leaf production generally expands the commercial circuits for processing and trafficking activities.

During the 1985 coca leaf harvests, reports of labor shortages for the production of potatoes and corn in the Cochabamba Valley, and sugar cane and rice in Santa Cruz, were not uncommon. Over the medium- and long-term, these shortages will negatively effect food supplies and prices for the Bolivian population.

Despite the rapid expansion of coca leaf production and increase in rural incomes in the Chapare, these gains have not improved the basic quality of life for the rural population. Most communities in the Chapare are without potable water, electricity and basic health services (Flores and Blanes 1984). In Bolivia these services are provided by the Ministry of Health and the regional public development corporations, which are not receiving revenues from the increased rural incomes based on the coca leaf. Sanitation and hygiene are at very low levels even for a poor country such as Bolivia. In-

fant mortality, malnutrition and gastrointestinal illnesses are prevalent. The dropout rates at junior and senior high schools and agricultural vocational schools have reached extremely high levels. Thus this dynamic peasant-based economic development is not contributing to beneficial social changes for the rural population.

The coca monoculture pattern has made the Chapare increasingly dependent on imported food and luxury items that are incompatible with Bolivia's economic base and per capita income levels. In the Chapare, income earned from coca production is not invested in land and animals as it is in traditional peasant communities but rather in imported luxury consumption goods and for speculative purposes that contribute little to national production and development.

Moreover, within the Chapare there is a very marked increase in the monetarization of the peasant economy and a breakdown of the reciprocal labor patterns and mutual support structures characteristic of local Andean life (Flores and Blanes 1984). Wage labor has become the rule and is displacing traditional forms of exchange which have provided stability, continuity and even equity in peasant communities.

During 1984 and 1985, it has also become clear that the expanding drug economy has fueled the rate of inflation and set an exorbitant cost of living for residents of the Chapare and the rest of Cochabamba (*Los Tiempos* 1985). The Chapare and the city of Cochabamba now have replaced Santa Cruz as the most expensive places to live in Bolivia. The direct cause is the rapid regional growth of coca paste-making and trafficking. In the town of Shinahota, in the Chapare region, the cost of a piece of bread has risen to \$1, and the daily cost of living from \$20 to \$100, which is much higher than elsewhere in rural Bolivia (*Los Tiempos* 1985). In 1984, Cochabamba was one of Bolivia's least expensive cities; now, just two years later, it is one of the most expensive.

Another negative change is the decreasing traditional cultural value of the coca leaf, the sacred plant of Andean society (see Allen this volume). Under the pressure of the commercial drug boom, the sacred coca plant has become a commodity exclusively for cash exchange and commercial gain (Flores and Blanes 1984). This trend is evident in the small-holder areas of Chapare and, to a lesser extent, in the upper Cochabamba Valley.

The other major impact of this dependency development falls upon the million-and-a-half coca leaf chewers in Bolivia. A much higher percentage of the Bolivian population regularly consumes the coca leaf for daily sustenance than is involved in the production, transport, marketing, processing and trafficking of the coca leaf and its derivatives. Indeed, 87 percent of the inhabitants in the small towns and rural communities use the coca leaf for some 40 different health remedies (Carter 1981:129).

The impact of the drug business on peasant consumers of the coca leaf has been uniformly negative. The price of coca leaf is affected by foreign demand for cocaine and, consequently, has increased rapidly in recent years. The quality of the leaf available to peasants in legal local markets has



Peasant woman arrested for involvement in coca paste-making activities, the Upper Cochabamba Valley, 1985.

declined. Thus the price, quality and scarcity have made the coca leaf less accessible to low-income coca chewers. This development has negative consequences for human welfare, cultural integrity and energy levels of a large percentage of the rural population engaged in mining and agriculture.

Equally serious are the environmental problems in the Chapare resulting from the drug boom; the pursuit of quick profits undermines the ecosystem and the resource base necessary for sustained and broad-based economic development in the future (Flores and Blanes 1984). In the upper Cochabamba Valley, recent reports also indicate ecological damage to farm lands, water supplies and livestock maintenance because of cocaine-processing chemicals dumped into streams and irrigation ditches (Centro de Estudios de la Realidad Económica y Social – CERES, unpublished findings).

When one adds the illegal dimension of the drug-related activity to this dependency analysis, many other negative consequences come to light regarding the general socioeconomic development patterns. In the department of Cochabamba, both prostitution and rape have increased dramatically as social by-products of the expanding drug economy. Thousands of peasants are being pulled into an underground economy within a political framework that severely sanctions those who are apprehended. The number



Fasants arrested at cocaine processing laboratory in Cochabamba Valley

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Officials confiscate coca paste from peasants selling it in the market town.



A peasants damaged feet as a result of work as a pisadore in the Chapare.

of those arrested and confined to jail terms disproportionately come from the peasant class.¹³ In the official combat against the drug trade, the brunt of state repression falls upon the peasants (*Narcotráfico y Política II* 1985). The constant clashes between state authorities and peasants raises the level of class conflict and tension in the rural society, which in turn contributes to greater social unrest.

The involvement of the pisadores in the drug-processing activity has led to a sort of induced consumption effect for low-income and poorly educated peasant youth. These day laborers are frequently paid with cash and low-grade coca paste which they have learned to consume. This consumption of the paste as pitillos is spreading in endemic proportions among younger generations in rural and urban Bolivia. The paste has many more impurities than cocaine hydrochloride -- pure cocaine -- which is consumed in the United States. In addition, it is presumed to have many serious health effects upon the user. Examinations are underway in Bolivia to determine the health impact upon the pisadores, whose feet come into contact with various types of acid over many hours. Preliminary reports indicate alarming results.

Finally, the societal impact resulting from dependent development rests on the fact that cocaine processing and trafficking violates international treaties and national laws, and introduces criminal elements and an unprecedented level of violence into the society.¹⁴ These sweeping and ever-

cumulative changes are detrimental to social stability, societal well-being and human development, as well as to the economy. The Bolivian dependency panorama has many convincing arguments that underscore the urgency of finding an effective solution to this drug expansion problem. However, as we shall see in the next section, the Bolivian state, for a variety of reasons, is in an extremely weak position to curb the growing drug economy.

National Political Context of Coca and Cocaine Trafficking Control

The rapid expansion of coca leaf production and cocaine refining in Bolivia can also be related to a number of political and historical factors which influence the state's power to curb the drug-related boom. The Bolivian state suffers from many disadvantages in controlling the expansion of the drug economy. Part of its inability to reduce the drug business can be attributed to its legacy of chronic political instability. Since its independence in 1824, Bolivia has experienced 189 coups to change governments in power. This obviously takes its toll on a state's ability to implement official programs.

The income, production and standard of living for citizens of Bolivia, already one of the lowest per capita income countries in the world, have declined tremendously in recent years. A simultaneous diminishing resource base and public salary scale of the state restricts its ability to take effective program action. For example, during 1984 a law enforcement officer in Bolivia received a monthly salary of \$20. These low-paid public officials, whose purchasing power has recently declined because of hyperinflation, find it exceedingly difficult to resist the economic payoffs and opportunities for private gain in drug-related involvement.

Historically, the poverty in Bolivia has encouraged the low-income population to engage in petty smuggling. For the most part the Bolivian state's control over international smuggling activities has been ineffectual. Bolivia shares porous borders with Brazil, Peru, Paraguay, Chile and Argentina for even such petty contraband goods as underwear and canned goods. The state has had great difficulty in halting the flow of these illicit goods which, unlike coca, have not been under the domain of powerful economic groups. The Bolivian state has also been unable to halt the illegal, untaxed flow of some exports of rubber, Brazil nuts and oil. Given its poor record of contraband control and the rapidly increasing number from the labor force entering this economic activity, it therefore would be unrealistic to expect effectiveness in programs against the smuggling and trafficking of cocaine and related processing chemicals controlled and purchased by the powerful interest groups that today operate inside and outside of Bolivia.

Furthermore, the drug trade has brought a windfall of dollars into a context where both foreign exchange and foreign and national investment are extremely scarce. Despite the rapidly spreading social and economic ills associated with the cocaine boom, any government would certainly hesitate before uprooting the main source of dollars for a rapidly deteriorating

economy wracked by depression and debt crises. It is widely believed that without the influx of drug dollars Bolivia's sagging economy would have totally collapsed.

A previous section indicated that the political constituencies involved in the drug trade include economic and political elites who have been controlling and deriving favorable policies and benefits from the Bolivian state during the past three decades. These groups include the cattle ranchers and commercial elite of the Beni, the agrobusiness elite of the Santa Cruz region, sectors of the military, assorted commercial middlemen and transporters in Cochabamba. The political and economic power of these social groups, regardless of the government in office, is another serious obstacle for the state in controlling illicit coca leaf and cocaine trafficking activities.

Peasant Political Activism

An extremely important element in the drug-related political constituency is the Bolivian peasantry, one of the most socially and politically mobilized in the world. This hyperactivity is both a manifestation of and a cause of the weak state. Since the 1952 social revolution, most rural farming communities have been formed into organizations called *sindicatos*, which are represented by leaders at the local, regional and national levels. The *sindicatos* mobilized in 1952 to implement and enforce the redistribution of land and the elimination of serfdom in the mountain areas of the country. At that time it was the second (after Mexico) major agrarian reform and social revolution in Latin America.

Two and a half decades later, after a return to constitutional and democratic rule from 14 years of military rule, the *sindicatos* under the national peasant sindicato organization, the Confederación Sindical Única de Trabajadores Campesinos de Bolivia (CSUTCB), or Confederation of Peasant Worker Unions of Bolivia, resumed their role as an independent and vigorous pressure group which is capable of making claims on scarce state resources and influencing high level decisions (Healy 1985; Rivera Cusicanqui 1984). For example, CSUTCB currently plays an informal lobbying role with influence over government appointments to the Ministry of Peasant Affairs and Agriculture. This ministry is the key to the peasants' rival development interests and the allocation of resources to the agricultural sector. The peasant sindicato organizations have employed sophisticated means of using the news media, print, radio and television to represent the interests of Bolivia's peasant majority and to embarrass and pressure the relevant government ministries.

The recent political activism is singularly impressive when compared to other peasant and worker confederations in Latin America. Strategies used by the peasant *sindicatos* include sit-ins and occupations of government offices and rural development projects. One or more tactics have been used against all of the government agencies pertaining to rural development, as well as Bolivia's three World Bank-sponsored integrated rural development projects.



Peasants form a road blockade to demand free marketing of coca leaf in the Upper Cochabamba Valley.

Road blockades in the countryside are another common tactic used to pressure the state to meet concrete social, economic and political demands. During 1983 and 1984, there were 18 major road blockades in the Bolivian countryside (Healy 1985). Each blockade involved thousands of sindicato members, both men and women. One important illustration of the use of this tactic in relation to the coca leaf issue took place in April 1983. Peasant activists from the three major *Altiplano* (high plateau region) departments of La Paz, Oruro and Potosí mobilized a week-long road blockade. They finally compelled the government to sign six new presidential decrees and five ministerial resolutions to meet their demands. These demands included the "right" to market the coca leaf free. In this way, a three-department movement involving thousands of peasants under the CSUTCB, with publicly expressed support from the national trade union movement, Central Obrero Boliviano (COB) or the National Bolivian Worker's Union, protected the interests of the coca producers in the Chapare and Yungas regions.

Moreover, within this national context of peasant political mobilization, the sindicatos from the Chapare are one of the two best-organized and most active groups in the Bolivian countryside, the other being the Tupac Katari

(Healy 1985).¹⁵ Coca producers have a sindicato with regional and national representation, a national association of coca growers and a federation of colonists, all of whom hold frequent press conferences and congresses to protest state interference in the production and marketing of the coca leaf. It is widely believed that the leaders of the Chapare sindicato federation collaborate closely with the drug traffickers from Cochabamba, Santa Cruz and the Beni. The Chapare coca producers have launched mass marches, hunger strikes, occupations of government facilities and road blockades. A few specific examples illustrate the combative behavior adopted by coca growers when faced with state efforts to exert greater control over the production and marketing of the coca leaf in the Chapare.

In 1982, the government organized wholesale marketing facilities in the Chapare to control the coca leaf production and channel it toward licit activities. The officially stated expectation was that the government would perform the services of a marketing board to prevent the coca leaf from flowing into illicit channels. During this period, however, the military was still in power and represented a major drug trafficking group.

It was widely believed in the Chapare that the military government used this coca supply for its own drug trafficking operations. However, despite this attempt at monopoly, only a relatively small percentage of the coca leaf production entered these official channels. Due to the poor execution of this government program and rampant official corruption, the peasants bypassed this alternative. In addition, the frequently coercive role of government agents brought them into conflict with Chapare small-holders, thereby raising the level of tension and conflict in the zone. Judging from many reports in Bolivian newspapers of peasant reactions to government heavy-handedness, this conflict also appears to have had, at least in some instances, a politically radicalizing effect on peasant political attitudes in relation to state behavior (*Los Tiempos* 1985a).

However, in 1983, taking advantage of a context of renewed democracy, constitutional rule and political party activism, the peasant sindicatos occupied the government wholesale facilities and forced the government officials stationed there to abandon the zone. Within several months the sindicatos turned the coca wholesale centers into rural schoolhouses.

A second example of state attempts at control of the paste-making and local trafficking operations took place during August 1983. The government staged a military occupation of the Chapare as a measure to combat the rapid proliferation of clandestine laboratories. The occupation took place after an advance warning, apparently by government officials, which enabled the larger processors and traffickers to abandon the area ahead of time. Five hundred soldiers confronted thousands of rural coca producers.

The military occupation was controversial and severely criticized by the Bolivian labor groups, COB and CSUTCB. In September 1983, the federation of peasant sindicatos from the Chapare sent 7,000 members to the city of Cochabamba to engage in a hunger strike of protest. After three days they changed tactics. In the same city, they conducted a large protest march

which involved thousands of peasants carrying placards with anti-government and anti-US slogans. (It was believed that the US government was instrumental in planning this occupation.) After this, too, failed to achieve their objective – the removal of the military from the Chapare – they resorted to a road blockade involving thousands of peasants and hundreds of sindicatos and successfully sealed off the city of Cochabamba from the rest of the country. Cochabamba, one of Bolivia's largest cities, lies on the principal transport and commercial axis between the major urban centers of Santa Cruz and La Paz. The peasants' pressure tactics successfully compelled the state to withdraw the troops from the Chapare and shortly thereafter to sign decrees that provided for the "free" marketing of the coca leaf.

Another example of this vocal and tenacious support for peasant rather than governmental control over the coca leaf was demonstrated by the platform for a major peasant labor congress with delegates from all regions of the country (CSUTCB 1984). The official document of that event called for the rejection of all attempts to substitute and eradicate the coca leaf and called attention to the multiple values of the leaf for rural society. The CSUTCB delegates addressed this issue by stressing medicinal, sacred (for ritual purposes) and nutritional value of the coca leaf and vehemently rejected control policies. They denounced the use of herbicides for coca eradication programs and the government's role as an intermediary organization for marketing. The statements of the congress called for peasant sindicato, rather than state, control over the marketing of the leaf. In addition, they voiced support for projects of "industrialization" of the leaf. Such projects involve processing the coca leaf for legal pharmaceuticals and food products that the industrial nations can purchase.

Statements and documents such as these usually include a repeated and uncategorical opposition to the illicit drug trafficking in Bolivia. The documents make distinctions between the drug-related interests and those interests and rights of both the coca-producing and coca-consuming peasants. However, it is widely believed that some members of the sindicato federation leadership of the Chapare collaborate with drug traffickers. The national movement, though, is spearheaded by peasants who fear the runaway inflation and having their standard of living reduced to that of the low-income population in rural Bolivia. Thus the level of organization and social mobilization capacity of the national and regional campesino movements help make them another major obstacle for the state in its attempts to curb the expanding drug economy.

Solutions to the problems of the drug trade's grip over Bolivia's economy must deal with the plight of Bolivia's mountain farmers. Recent plans to provide economic alternatives to coca-growing tend to focus on investments in the Chapare and Yungas areas and not on the needs of the highland Andean communities – the source of the labor force and farmers that have increased coca leaf production. This is the same mistake made throughout the past 30 years by successive Bolivian governments which

have ignored the financial, economic and social needs of the food-producing highland peasant majority. As a result, during this modern period, highland peasant family purchasing power and farm resource bases have progressively deteriorated.

A realistic solution to the drug economy problem would be to reverse the terms of trade between the city and the countryside which discriminate against highland food producers. This must be accompanied by state support for highland development activities such as soil conservation, seed production, rural credit, effective agricultural extension, veterinary services, irrigation facilities and subsidies for fertilizers. The peasant movement in Bolivia could be mobilized to provide popular support for such a program. Despite modest state support, Bolivia's small-scale producers are among the best organized in the hemisphere and highly integrated (in spite of the disadvantageous terms) into the urban market economy for the production of practically all important foodstuffs. Additional evidence from pre-Columbian records indicates that Andean peasant agriculture can be highly productive if given effective state support and organized under suitable Andean social institutions.

Notes

¹Making cocaine from the coca leaf is a three-stage process. The first stage involves extracting the alkaloid from the leaf itself, which produces the coca paste. The second stage consists of adding sulphuric acid to the paste to make cocaine base which is 70 percent pure cocaine. These two processes take place in rustic laboratories or "kitchens" in Bolivia. The third stage involves final refining to the hydrochloride product which is pure cocaine. This requires more sophisticated equipment and know-how. This operation has traditionally been done in Colombia but also increasingly takes place in the larger illegal operations in the Bolivian departments of Santa Cruz and Beni.

²There are several reasons why coca cultivation remains under peasant ownership on small plots. In the Yungas region the national agrarian reform of 1952 redistributed land rights in small parcels to peasant producers. Also, the highly rugged mountainous topography does not lend itself to the development of large production units. In the Chapare region in the Department of Cochabamba, the resettlement and agricultural expansion took place via individual peasant colonists. In addition, the Chapare's layer of topsoil is not suitable for capital-intensive production techniques and the coca leaf is a labor-intensive crop. Once coca became a lucrative illicit crop, official control programs attempted to restrict production. This made large-scale coca fields highly risky investments because they were vulnerable to detection and subsequent crop eradication efforts.

³This paper focuses exclusively on the Chapare region since that area supplies 75 percent of the coca leaves which enter the illicit processing channels (Blanes 1983:142).

⁴The term "rural elites" used in the Bolivian context denotes an upper income social stratum that engages in commercial production activities or in the transporting and marketing of farm or manufactured products in small towns and rural communities, or both. The elites constitute a privileged minority within a social class system that gives them disproportionate social privileges, wealth and power. Their social and economic conditions contrast greatly with the majority peasant class. Through a variety of mechanisms, the elite social class wields considerable power over both the peasant social class and the local and regional public institutions.

⁵In its February 25, 1985, issue, *Time* magazine reported 200 "cocaine barons" in the Beni region.

⁶Although hard evidence about involvement of a certain group within the military in cocaine smuggling exists, it by no means suggests that such participation is pervasive throughout the entire institution. Quite to the contrary, it seems to have been limited to this small group. In-

deed, the military, unlike the police, has demonstrated a capacity and interest in combating cocaine refining and smuggling activities, even among its members. Recently they captured 140 kg of hydrochloride and two small planes on a Santa Cruz ranch owned by a former army colonel and captain (*Presencia* 1985b). Despite advance warning to traffickers, the military occupation of the Chapare in 1984 demonstrates how the military can be deployed for drug crackdowns.

⁷The coca base called *sulfato* or *pasta básica* in Bolivia is then transferred to the Beni and Santa Cruz departments for final refining or transport, or both, outside the country. However, during 1984-85, a drop-off in coca paste production seems to have occurred in the Norte de Santa Cruz region. The decline in the price of coca paste from \$1,000 to \$250 per kg has made profits less lucrative to these large Santa Cruz operators who must arrange transportation of the coca leaves from Cochabamba. Numerous illegal producers accustomed to a 300 percent return on this high-risk investment have temporarily halted their processing activities. Other clandestine elite producers in the Beni and Santa Cruz regions, however, have shifted economic activity to the final stage of processing cocaine hydrochloride.

⁸Various Bolivian newspapers reported that peasant coca paste making resumed on a large scale in the Chapare during early 1985.

⁹The Santa Cruz transporters and assorted middlemen continued their economic participation in the drug boom. Government records show that in 1983 the Department of Santa Cruz had five times the number of authorized coca leaf wholesalers than any other department (GOB 1984), although Santa Cruz has fewer coca leaf chewers than five other Bolivian departments.

¹⁰A peasant farmer in the Chapare, in November 1984, could earn \$9,000 annually from cultivating one hectare of coca according to a recent report of the Organization of American States. The earnings from the second most profitable Chapare crop, citrus, were \$500 (OAS 1985). Other sources indicated that in 1982-83, earnings from coca averaged between \$5,000 and \$6,000 per hectare (Centro de Estudios de la Realidad Económica y Social – CERES, personal communication).

¹¹Automobile, motorcycle and truck sales are booming in the upper Cochabamba Valley, too. Drug traffickers from Santa Cruz now appear in local markets offering to exchange automobiles and motorbikes on the spot for coca paste (*Los Tiempos* 1985i). During 1985, 20,000 new automobiles were acquired in Cochabamba either through the contraband trade or as legal imports (*Los Tiempos* 1986).

¹²The drudgery and mistreatment indigenous peasants suffer at the hands of the powerful drug traffickers makes the entire experience less than a folkloric party, however. Similar to cotton-pickers, rubber-tappers, and cane-cutters in lowland Bolivia, peasants involved in coca leaf production and cocaine-refining operations frequently complain about discrimination, false promises and exploitation. When asked how the drug traffickers treated the peasant workers, one peasant who had returned from employment in a coca paste-processing plant said, "Damn, really badly. They use us as sheep. They make us *pisar* (stomp) the coca. They teach us to smoke and drink. It is very bad the way that they exploit us, but since we do not have other means to earn money quickly, we have to put up with the 'narcos' (drug traffickers) who at first offer us lots of money, beer and many other things, but afterwards when we finish, they only give us some bills so that we will continue to *pisar coca*" (*Crónicas* 1985).

¹³As a result of the higher number of drug-related arrests among the low-income population, several government detention centers have become grossly overcrowded, leading to a number of health and social problems.

¹⁴One newspaper calculation recorded over 300 murders connected to drug trafficking in Bolivia during the past three years (McFarren 1985).

¹⁵One measure of their political consciousness is voter registration; during the 1985 presidential election those provinces with the highest percentages for voter registration included the four provinces of the Chapare (*Presencia* 1985d).

Bibliography

Albo, J.

1984 De MNRistas a Kataristas a Katari. Conferencia sobre Resistencia y Rebelión en los Andes, Siglos XVIII-XX, Madison, Wisconsin, mimeo.

Albo, J. and Barnadas, J. M.

1985 *La Cara Campesina de Nuestra Historia*. La Paz: Unitas.

- Bascope, A. R.
1982 *La Veta Blanca, Coca y Cocaina en Bolivia*. La Paz: Ediciones Aqui.
- Blanes, J.
1983 *De Los Valles al Chapare*. Cochabamba: Centro de Estudios de la Realidad Económica y Social – CERES.
- Bodenheimer, S.
1971 Dependency and Imperialism: The Roots of Latin American Underdevelopment. In K. T. Fann and D. Hodges, eds. *Readings in US Imperialism*. Boston: Post Sargent Publisher.
- Carter, W.
1981 Medicinal Uses of Coca in Bolivia. In J. Bastien and J. Donahue, eds. *Health in the Andes*. Washington, DC: American Anthropological Association.
- Crónicas*
1985 Toco: La Nueva Capital del Narcotráfico. 7:4 July/August.
- CSUTCB (Confederación Sindical Única de Trabajadores Campesinos de Bolivia)
1984 *Plataforma de Lucha de los Explotados del Campo en su Segundo Congreso de Unidad Campesino*. La Paz, Bolivia.
- Dandler, J. and B. Andersen
1982 *Economía Campesina en los Valles y Serranías de Cochabamba: Procesos de Diversificación y Trabajo*. La Paz: Centro de Estudios de la Realidad Económica y Social – CERES.
- de Janvry, A.
1981 *The Agrarian Question and Reformism in Latin America*. Baltimore, MD: Johns Hopkins University Press.
- DeMott, S.
1985 *Bolivia: Poor Caught Between Economic Chaos and Lucrative Cocaine Trade*. Latin American Press. 16 May 1985.
- Dunkerely, J.
1984 *Rebellion in the Veins, Political Struggle in Bolivia (1952-1982)*. Norfolk, England: Thetford Press.
- Eckstein, S.
1979 El Capitalismo Mundial y la Revolución Agraria en Bolivia. *Revista Mexicana de Sociología*, XLI:457-478.
- Flores, G. and J. Blanes
1984 *Donde Va el Chapare*. Cochabamba: Centro de Estudios de la Realidad Económica y Social – CERES.
- Gereffi, G.
1983 *The Pharmaceutical Industry and Dependency in the Third World*. Princeton, NJ: Princeton University Press.
- Gill, L.
1984 Commercial Agriculture and Peasant Production: A Study of Agrarian Capitalism in Northern Santa Cruz, Bolivia. Ph.D. diss., Columbia University.
- GOB (Gobierno de Bolivia)
1984 *El Gobierno de Bolivia y su Lucha contra el Narcotráfico*. November La Paz.
- Healy, K.
1985 The Rural Development Role of the Bolivian *Sindicatos* in the New Democratic Order. Presented at the XII International Congress of the Latin American Studies Association, Albuquerque, NM.
- Henkel, R.
1982 The Move to the Oriente: Colonization and Environmental Impact. In J. Ladman, ed. *Modern Day Bolivia: The Legacy of the Revolution and Prospects for the Future*. Arizona: Center for Latin American Studies. pp. 277-301.
- n.d. Coca and Cocaine – The Industry and Its Impact. In forthcoming volume. Tempe, AZ: Arizona State University Press.

- Henman, A.
 1978 *Mama Coca*. Editorial, *La Oveja Negra*. Bogotá, Colombia.
- Hoy
 1985 Aumenta Narcotráfico en el Chapare Tropical. 19 August.
- Informe 'R'
 1984 Centro de Documentación e Información, IV. February. La Paz, Bolivia.
- LAB-Iepala
 1982 *Narcotráfico y Política. Militarismo y Mafía en Bolivia*. Madrid.
- Laserna, R.
 1984 *Espacio y Sociedad Regional*. Cochabamba, Bolivia: Centro de Estudios de la Realidad Económica y Social – CERES.
- Lee, R.
 1985 Latin American Drug Connection. *Foreign Policy* 61(Winter):142-160.
- Los Tiempos
 1984a Viaje a las Republiquetas Pichicateras – Cocaína: El Resplandor del Oro Blanco. 15 July.
 1984b Los Bolleros y el Consumo Interno. 22 July.
 1984c Problema de Narcóticos Amenaza a la Soberanía de los Estados. 18 September.
 1985a Operativos Sorpresa Realizó Grupo Leopardos en el Valle. 5 February.
 1985b Profesores Rurales Derivaron en la Fabricación de Cocaína. 27 March.
 1985c 6 Millones de Pesos Día Pagan a los Pisacocas. 27 March.
 1985d Autoridades Municipales en Negocio de la Coca? 7 April.
 1985e El Valle Alto, Centro Importante de la Cocaína. 13 April.
 1985f Acción del Narcotráfico Aumenta el Comercio de Acedor y Kerosene. 15 April.
 1985g De 500 Tambores de Coca que Salen Solo 164 Llegan al Mercado Único. 17 April.
 1985h Narcotráfico se Generaliza en la Zona del Valle Alto. 17 April.
 1985i El Trueque de Droga por Motorizado Es una Práctica Corriente en Toco. 21 April.
 1985j Venden 10 mil Litros Diarios de Kerosene al Narcotráfico. 9 June.
 1985k Comercialización de Papel Higiénico Negocio Lucrativo de Moda en Chapare. 19 June.
 1985l El Costo de la Vida en Shinahota Es el Mas Alto de Sudamerica. 18 July.
 1985m La Herencia Corruptiva de Cocaína. 20 August.
 1986 Narcotráfico y Macaquismo. 3 February.
- Lynch
 1971 Pre-Ceramic Transhumance in the Callejón de Huaylas, Perú. *American Antiquity*, 36:139-148.
 1981 Zonal Complementarity in the Andes: A History of the Concept. In P. D. Francis, F. J. Kense and P. G. Duke, eds. *Networks of the Past: Regional Interaction in Archaeology*. (Chac Mool Conference). University of Calgary Archaeological Association.
- McFarren, P.
 1985 *Los Tiempos*. 20 August.
- Morales, R.
 1985 La Crisis Económica en Bolivia. *Informe 'R'*, V. Centro de Documentación e Información. May. Bolivia.
- Murra, J.
 1972 *El Control Vertical de un Máximo de Pisos Ecológicos en la Economía de las Sociedades Andinas*. En *Ortiz de Zuñiga* (1562).
- Narcotráfico y Política II: Bolivia 1982-1985*
 1985 Cochabamba.
- The New York Times*
 1985 US Says Smugglers Overwhelm Borders with Record Cocaine Flow. 8 August.

- Opinión*
- 1985a Sepes Usan Cincuenta Rutas para Llevar Coca al Valle. 21 February.
- 1985b La Produccion de Chicha Bajó por Influencia de la Cocaína. 5 April.
- OAS (Organization of American States)
- 1985 Socioeconomic Studies for the Inter-American Specialized Conference on Drug Traffic. Washington, DC.
- Pearse, A.
- 1980 *Seeds of Plenty, Seeds of Want: Social and Economic Implications of the Green Revolution*. Geneva: United Nations Research Institute for Social Development.
- Presencia*
- 1984 Prefecto Calcula Que 25,000 Personas Fugaron de Chapare. 8 August.
- 1985a La Producción de la Hoja de Coca Pasará en 1985 de la 171,000 Toneladas. Presidente del Comité Contra el Narcotráfico. La Paz. 31 January.
- 1985b Patrulla del Ejército Descubrió Fabrica de Cocaína en el Chaco. 23 June.
- 1985c El 8 Por Ciento de los Nacidos en Bolivia Vive en el Extranjero. 27 June.
- 1985d Cochabamba: Alto Porcentaje de Inscritos en Areas Rurales. 13 July.
- 1986 El Narcotráfico Genera en Bolivia mas de US \$486 Millón al Año. 15 February.
- Rivera Cusicanqui, S.
- 1984 *Oprimidos Pero No Vencidos! Luchas del Campesinado Aymara y Quechua, 1900-1980*. La Paz: HISBOL.-CSUTCB.
- Time*
- 1985 Fighting the Cocaine Wars. 25 February.
- Weil, J.
- 1980 The Origin of Work in a Quechua Pioneer Settlement. Ph.D. diss., Columbia University.

FROM COCA TO COCAINE: THE POLITICAL AND ECONOMIC IMPLICATIONS FOR TRIBAL AMAZONIAN INDIANS

Theodore Macdonald, Jr.

Like their Andean counterparts, some Amazonian Indians are beginning to "grab a piece of the action" in the hemisphere's most lucrative enterprise – cocaine. Although on a much smaller scale than either Andean Indians or colonists recently settled in the Amazon, traditional tropical forest residents are shifting the status of the coca plants from one among hundreds in their house gardens to a plantation-grown cash crop. A few are even processing the leaves into PBC (a paste that is refined into the white powder, cocaine hydrochloride), to earn higher profits. Brightly painted outboard motors, shiny digital watches and portable radios with huge speakers now glitter in Indian settlements that dot the otherwise homogeneously green Amazonian landscape. Members of a population which, by and large, was linked only marginally to the market economy, have become conspicuous consumers almost overnight.

However, while some Andean and lowland colonist communities have organized to *defend* the right to grow and process coca (see Healy and Strug this volume), many Amazonian Indian leaders oppose participation in the cocaine trade and dissuade community members from becoming involved. They do not puritanically reject coca (coca's ritual significance is as important to many Amazonian communities as it is to those of the Andes) or the flashy gadgets it engenders, but are concerned about priorities the cocaine trade's short-term, individually obtained profits contradict. Leaders throughout the Amazon basin have been working to build broad-based political organizations or "ethnic federations" (Smith 1985), and to develop economic projects that offer Amazonian Indians a modest but sustainable future. The legal, political and economic implications of intensive coca production and cocaine processing run counter to this movement.

Coca production and processing are not economic panaceas. Kendall (1985:11) calculates that

The small grower can hardly expect to make enormous profits. The economics of a very small production unit in the Cauca region of highland Colombia are roughly as follows: to produce about 40 grams of cocaine paste requires about \$27 for 25 pounds of coca leaves and \$19 for chemicals. The paste, sold locally at around \$1.50 a gram, brings in a \$14 profit on each batch. A family usually makes about three batches a week; labour is not reimbursed in this case.

Many Indian leaders recognize that, although such sums represent relatively large increases in household income, small-scale producers obtain only a minuscule fraction of the ultimate value of their labor.

The physical dangers of increased Indian participation in coca production poses are more obvious. Indians are more likely to suffer from police action than are the moguls who dominate the trade. *Time* magazine (25 February 1985) described a dramatic raid by Bolivia's elite "Leopard Corps" on a Quechua hamlet where a small PCB factory had been installed. A US Embassy official commented, "These small timers . . . will languish in jail for months." While it undoubtedly takes longer to obtain the release of Indians and campesinos, the official failed to mention that Indians are those most likely to be apprehended. Indian plantations and factories are safer targets than extensive, colonists' plantations or the major producers' heavily armed camps (*The New York Times* 10 January 1986; *The Boston Globe* 10 January 1986). Rivera (1981), for example, cites cases of violent raids on small Indian plantations situated along the principal highway of Colombia's Guahira Peninsula, where truckloads of marijuana and cocaine controlled by the large dealers travel back and forth, usually uninterrupted.

In addition, although the percentage of overall production obtained from small-scale, individual Indian producers is minuscule, police and army raids can be *expected* to occur frequently in Indian settlements. These raids demonstrate efforts at drug control and thus, in an innocuous way (for the police and army), illustrate compliance with US Drug Enforcement Agency pressure, and justify lucrative aid programs offered as compensation for those working to control cocaine traffic by attacking the source of production. Moreover, individual Indian producers rarely pay off the police to keep them at bay.

In a more insidious way, "drug raids" on Indian communities often serve interests totally unrelated to drug enforcement. Many would like to accuse Indians, particularly the leaders of Indian organizations, of involvement in the drug trade, guerrilla movements or any other activity which casts these populations and their leadership as shadowy, sinister or criminal. Such accusations weaken Indian organizations' legitimacy and diminish their threat to the status quo. Unsubstantiated charges linking Colombia's Regional Indian Council of Cauca (CRIC) with the M-19 guerrilla movement in the late 1970s exemplifies such tactics. Likewise, in 1984, false accusations of armed subversive activity, and drug trafficking to pay for it, were leveled at communities linked to Ecuador's Organization of Indigenous Peoples of Pastaza (OPIP).

The long-term implications of involvement in the cocaine trade are more subtle, but nonetheless potentially tragic for ethnic federations and the interests they represent. Although Amazonian Indians are "poor" in terms of annual income, cash is not their primary need. Unlike their Andean counterparts, who have been progressively dispossessed of their lands for almost 500 years and subsequently tied to a market economy, many Amazonian groups have experienced the territorial and economic impact of frontier expansion only within the last 20 to 30 years. In response, ethnic federations have proliferated within the last 10 years. Their most consistently expressed needs are secure land tenure and sustainable economic develop-

ment programs to demonstrate land use. Throughout Amazonía, small but impressive efforts are underway to protect their land and resource base. Politically, socially and economically, the cocaine industry impedes this process. Although the most intense Amazonian Indian coca and cocaine production is in Colombia, accounts from Peru – the Asháninca of the Ene River – and from Ecuador – the Siona-Secoya of the Aguarico River – clearly illustrate the dilemma. Their situations are similar and, in many respects, can be generalized for numerous upper Amazonian populations. In addition, if cocaine production increases as expected in Brazil, many lower Amazonian Indian populations will find themselves in similar circumstances and forced to make similar decisions.

Peru: The Asháninca (Campa) of the Ene River

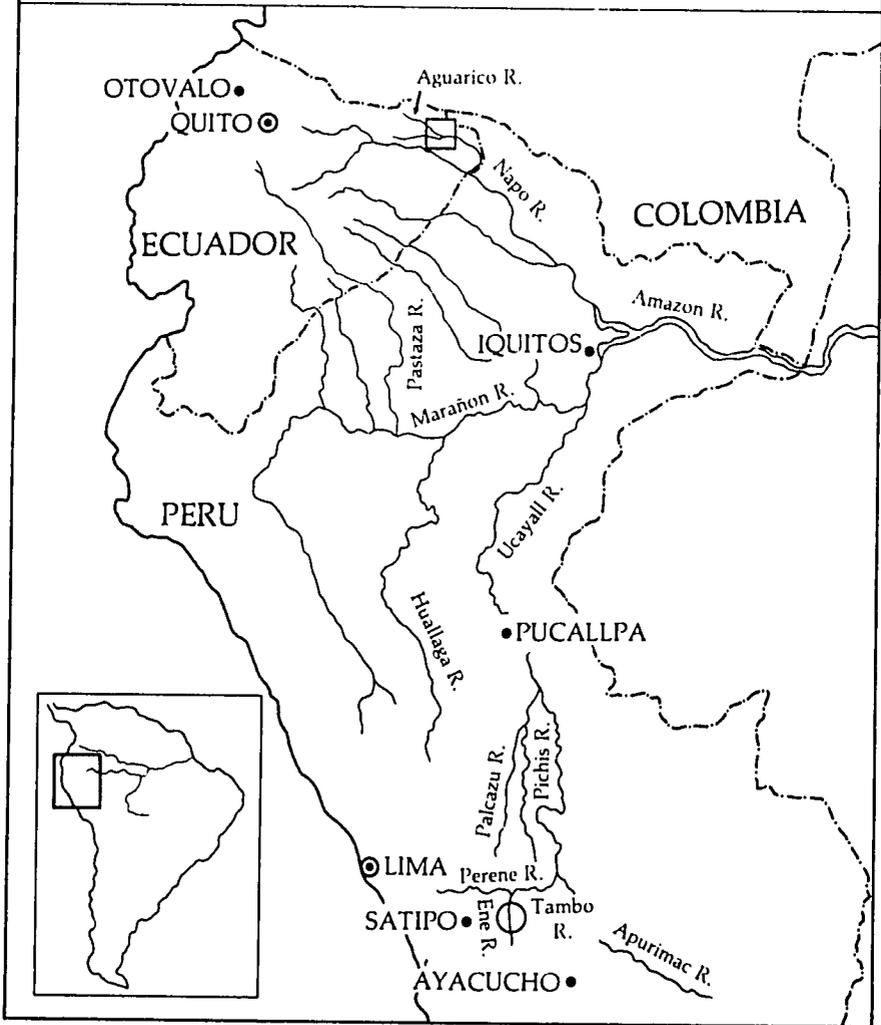
The valleys plunging east from the Peruvian Andes contain some of the continent's largest coca plantations, totaling roughly 60,000 hectares (Kendall 1985). More recently, they have become the sites of some of the most active PBC factories. Correspondingly, the greatest efforts to control production and to substitute crops occur here (see Strug this volume). In the Ene River area of the Peruvian Amazon, cocaine-related police and army actions are compounded by simultaneous efforts to eliminate the Maoist guerrilla movement, Sendero Luminoso (Shining Path), which recently expanded its activities from the Andean highlands around the city of Ayacucho into jungle settlements downstream from the mountain headwaters. While cocaine dealers have carried on their trafficking on the Ene River quietly for over 15 years, Sendero Luminoso entered with a bang in late 1983. Their presence alone places Indian residents in a dangerous position. However, the Campa's dilemma is not unique. Problems ubiquitous to Amazonian Indians and unrelated to either the cocaine trade or Sendero's Maoist politics more seriously threaten them; colonists and extractive industries covet Asháninca lands.

When the Spanish first arrived in Peru, the Asháninca occupied about 90,000 square miles. Regular threats and periodic violence directed at outsiders allowed the Asháninca to maintain control over much of their territory until the 1960s. At that time, colonists began to settle in large numbers in their territory. By the late 1960s the Indians had been largely displaced from the Chanchamayo River valley and from most of the Perené and Satipo valleys as well. Colonists had also entered the Apurímac and Pichis regions, pushing the Asháninca onto the least desirable hillsides. Most Campa in Peru's Central *Montaña* (high jungle region of the Andean slopes and foothills) soon found themselves living in dispersed settlements amidst non-Indian land holdings.

Others, rather than accept gradual displacement into the least arable zones of their homeland, migrated to the more isolated Ene and Tambo valleys. They lived there in relative calm until 1979. Early that year, however, a series of colonists' "associations" began to settle the upper reaches of the Ene River. In November a lumber concern, Forestal

PERU AND ECUADOR

○ CAMPA SETTLEMENTS □ SIONA-SECOYA SETTLEMENTS



Apurimac S.A. (FASA), began efforts to obtain over 200,000 hectares of forest alongside the Ene (CSN 1980b, Chiriff 1982, Macdonald 1982a). In response, the Ene Asháninca, like many Amazonian Indians, began the long and difficult process of claiming, demarcating and awaiting title to their land.

From January to September 1979, following an agreement between an Indian support group, the Centro de Investigación y Promoción Amazónica (CIPA) and the Peruvian Ministry of Agriculture, CIPA topographers surveyed Asháninca land along the lower Ene River. In October 1979, surveys demarcating 99,000 acres were deposited for processing and titling in the Ministry of Agriculture offices. Forty Campa settlements were to be consolidated, politically, into 12 *comunidades nativas* (the legally recognized Indian land-holding body established in Peru) with 39,600 acres suitable for agriculture and 46,200 acres of forest reserves for hunting and fishing.

In May 1979, however, several self-proclaimed "agricultural cooperatives" formed in the city of Ayacucho and, without consulting the Ministry of Agriculture, began to settle land that they identified as *tierras baldías* (unoccupied lands) on both sides of the lower Ene River. None of these organizations were the sort of egalitarian cooperatives agrarian reform legislators envisioned. Rather, the "colonists" were peons who represented speculators' and other entrepreneurs' interests and, as such, were little more than pawns claiming and working land the Campa occupied. The organizers of one cooperative, the Empresa Agroindustrial Santo Domingo, were mainly entrepreneurs taking advantage of adverse economic conditions in Ayacucho. They collected 31,500 soles (US\$125 at the time) each from hundreds of potential colonists, promising them land CIPA had already surveyed and which was in the process of being titled as *comunidades nativas*. Sixty percent of the founders of another organization, the Cooperativa Agraria de Servicios Selva de Oro, were Ayacucho businessmen, none of whom actually occupied or worked the land they claimed. They simply hired unemployed campesinos to occupy the land.

Meanwhile, FASA, hoping to chisel out a large forest concession in the Ene Valley, requested permission to study the timber reserves along the lower Ene River's left bank. The Ministry of Agriculture stated, however, that FASA could work only unoccupied land and demanded a study of local land tenure prior to any survey of forestry reserves. FASA chartered a plane and flew the Forestry Service's regional director over the desired territory. The director subsequently filed a report declaring that all lands on the lower Ene River's left bank were unoccupied and therefore available for commercial exploitation. FASA then moved quickly to claim 217,800 acres of land. The Forestry Service director's report, however, neglected to mention that three Campa communities – Shimpenshariato, Centro Tsomabeni and Tres Unidos de Matereni – lay along the left bank (Macdonald 1982a; Chiriff 1982). Moreover, FASA expelled some colonists from the desired forest lands and tried to nullify the surveys of Campa land.

This blatant violation of Ene Campa land rights produced a large national and international human rights campaign to protect their land (CSN 1980b, 1981). Subsequent developments in other areas, ironically, helped to make such efforts more effective. In late 1980, the Peruvian government announced the establishment of a Special Projects Office. Under the president's control, it was to oversee a large colonization and intensive agriculture project in the Pichis and Palcazu valleys on Campa and Amuesha Indian lands. As a result, another large national and international support campaign was launched (Smith 1982). The project was successful to the extent that the lending agency, the US Agency for International Development (USAID), required formal titling of all Indian communities in the project area before dispersing any funds for development activities. Although the Ene Campa communities were outside the project area, the Special Projects Office, nonetheless, began to demarcate land in that area. Beauclerk (1983) stated that in terms of land tenure, the Ene Campa's situation seemed to be improving.

Claiming and demarcating land is one thing; guaranteeing tenure is another. Many of the Ene Campa settlements' primary economic activity was hunting and fishing; horticulture was considered a secondary activity. Consequently, large amounts of their land were not visibly utilized and thus vulnerable to settlers' claims. To decrease this threat to their land base and alleviate the extreme poverty of the region, a small-scale agricultural development and marketing program was established (Beauclerk 1981). Although the program required altering existing agricultural patterns only modestly (basically adding rice and beans to predominantly manioc swidden plots), several of the communities were apathetic or disinterested. An Ene Campa Indian organization, OCARE, had yet to firmly establish itself to provide adequate support. Meanwhile, a road was advancing from Satipo to Puerto Ocopa on the Ene River. In anticipation of its completion, colonists other than those from the fictitious cooperatives were settling the area and by 1982 planting the upper Amazon's most lucrative crop — coca.

Unlike the earlier colonists and lumber concerns, cocaine traffickers left Asháninca community lands alone despite increased trafficking. Occasionally, high-powered speedboats would pull up to the river bank near a village with an airstrip. Shortly thereafter a small aircraft would land and, with engines still running, exchange cash for the cocaine paste that had arrived on the boats. Although Asháninca community airstrips were utilized for these transfers, the Indians were neither included in nor informed of them. They were simply told that the movement was none of their business and that by avoiding questions, they would avoid problems. In brief, early cocaine trafficking had little impact on Ene Campa leadership's efforts to organize the communities, coordinate development activities and work toward land titling.

This situation changed in 1983, when a combination of events drew police and army attention to the area. Cocaine-related activities on the Ene had evolved from simple trafficking to producing PBC. Colombian traffick-

ers had established a working base only a short distance from the Guardia Civil's elite "Sinchi" Corps' headquarters. Yet the producers and traffickers remained relatively immune from police actions; government concerns had been focused on the mountains, where police were attempting to control Sendero Luminoso's guerrilla activities. But in late August, suspecting that the cocaine traffickers were supplying Sendero Luminoso's weapons, one hundred Guardia Republicana police moved down the Ene, where they killed and arrested a large number of Peruvian colonists and Colombian traffickers. The remaining non-Indians obtained sophisticated weapons from the Colombians and resisted the government forces. Taking advantage of the conflict and confusion, Sendero Luminoso declared the isolated area a "liberated zone," and placed red flags along the river bank to signal possession.

On November 23 and 25, 1983, 12 Lima-based detectives, who initiated an operation on the lower Ene in the typically uncoordinated fashion that characterized police actions in the area, were shot and killed. The publicity that surrounded this ambush was a great embarrassment to an apparently impotent government and prompted demands for action. Anticipating large-scale reprisals, many of the Peruvian and Colombian traffickers evacuated the area.

The events of late 1983, nevertheless, threatened to turn the Ene into an area controlled by the guerrillas, or at least heavily influenced by them. This immediately affected those working with Asháninka settlements in the area. In August 1983, the Franciscan mission had requested permanent military protection; by 1984 the mission was closed. A health project supported by Save the Children was forced to reduce its visibility. By maintaining a relatively low profile, an Oxfam-supported agriculture and marketing project was able to continue (Beauclerk, personal communication 1984). The most serious reaction to the guerrilla threat was the forced withdrawal, from the area, of the Special Project surveying teams. As government officials, Special Project staff were prime targets for Sendero Luminoso. Yet the topographers were essential to demarcate and title the Ene Campa land.

The guerrilla threat, however, had its positive features; it forced Campa leaders to recognize that outside assistance is temporary and vulnerable to external pressures. Consequently, the Campa began to realize that effective local leadership and organization was essential if their communities were to confront encroaching colonization and retain even minimal control over their land and resources.

In summary, while the Ene Asháninka have yet to adapt stably and securely to an expanding national society, their response to coca production and cocaine processing illustrates at least three positive features. First, staying out of the cocaine traffic provided the Campa immunity from police and military repression, even as armed government presence increased in response to cocaine eradication and Sendero Luminoso. The Campa are fully aware of the need to maintain distance from such actions or associations; their communities suffered enormously during government efforts to sup-

press guerrilla activities in the 1960s. Equally important, beyond the physical security, police and army immunity shielded the incipient inter-community Indian organization, OCARE, from any negative imagery settlers and loggers making claims to Campa lands could lump onto the Indian communities.

Second, focusing on economic activities that demonstrate visible use of their land, rather than on ones that produce quick cash, and increasing small-scale agriculture, has helped Asháninca leaders to maintain and defend their territory and resources. The small-scale agriculture and marketing program presently underway is not a coca substitution or prevention effort, such as has been attempted unsuccessfully in areas like the upper Huailaga Valley (see Strug this volume). It is a means toward modest income and guaranteed land tenure. Although still held under extremely precarious tenure, their land can provide a sustainable future.

Third, when individual communities become involved in the trafficking or production of cocaine they threaten both intercommunity solidarity and pan-community security. The Campa's physical security, economic needs and land tenure are clear priorities of the incipient pan-community organization, but the organization's relative weakness illustrates the need to strengthen it. The leaders have not prevented all Indian participation in the cocaine trade; they have simply limited it. For example, when one Campa community became directly involved with nearby traffickers, the leader of the intercommunity agricultural project threatened to exclude that community from the program. The resulting dispute forced the leader to take a milder stand, both to maintain minimal community integration and avoid retaliation by non-Indian traffickers. To counteract such initiatives, leaders cite examples of the cocaine trade's negative consequences — one Asháninca's efforts at individual community "self-improvement" through alliances with drug traffickers attracted so many new, non-Indian settlers that they eventually took over the community and prevented its titling as a native community (Beauclerk 1984).

Ecuador: The Siona-Secoya

Although the Siona-Secoya's situation differs in several ways from that of the Campa, the Ecuadorian Amazonian Indians' most urgent problems offer interesting parallels. In contrast to the Campa, the Siona-Secoya's habitat, the Ecuadorian Amazon (*Oriente*) at present, is neither a major producer nor trafficker of cocaine (Kendall 1985). The US Drug Enforcement Agency has yet to exert the sort of pressure on Ecuador that it has in Peru or Bolivia. Consequently, there is neither the omnipresence of cocaine dealers, the imposition of major cocaine eradication programs or other forms of "drug" control or active antigovernment guerrilla groups operating in the region.

On the other hand, the Siona-Secoya are more politically organized than the Asháninca. At the level of both ethnic organizations and regional confederations Ecuadorian Amazonian Indians are perhaps the most well-organized in South America (CONFENIAE 1984). Although similar ethnic

federations and confederations are evolving in the Peruvian Amazon, they have yet to as effectively defend lands and resource rights, and have only begun to work with the isolated Ene Campa.

Similar to the Campa, however, pressure on Siona-Secoya land is recent and still not fully resolved. As the cocaine trade begins to raise its hydra-like head in the Ecuadorian Amazon, Siona-Secoya leaders have also worked to avoid contact. They recognize the cocaine trade as a threat to their communities' precarious land tenure and, by extension, to any long-term, sustainable economic development.

Until the late 1960s the Siona-Secoya were the principal residents of the middle and lower Aguarico River, its surrounding forest and the nearby Cuyabeno Lakes region. Like most such groups in Amazonía, they subsisted on a combination of swidden horticulture, hunting, fishing and gathering. Since the region had little river traffic and no roads, the Siona-Secoya settlements were relatively free of colonist and other forms of land invasion (Vickers 1972, 1976; Vickers and Hames 1983:458). Consequently, there was little need for and little concern with obtaining title to the land they used.

The situation changed radically in the early 1970s. High-quality petroleum was found northeast of the Aguarico River and by 1972 a huge pipeline was pumping petroleum from the jungle to the Pacific seaport of Esmeraldas. Roads built parallel to the main pipeline and the feeder lines that ran from the wells, provided access to one of the most inaccessible areas of the country, and thus permitted an enormous influx of colonists and workers.

Although colonists had been settling in the Ecuadorian Amazon for more than a decade,¹ most had settled in the more accessible southern provinces of Zamora and Morona-Santiago. Colonization increased rapidly in the northern Napo province only after the road was established. In 1962 the province's population was only a few thousand. By 1974 it had risen to 12,128. Two years later the population was 35,000, and the 1980 estimate was 70,000 (Uquillas 1983). The majority were colonists who settled lots along the road parallel to the pipeline. Almost overnight one of the most isolated and sparsely settled sectors of the country became the fastest-growing region in the nation. The growth rate has continued, to the extent that individual lots (normally 250 meters of frontage and 2,000 meters into the interior) are now 10 deep alongside a gridwork of roads radiating out from the city of Lago Agrio toward the Aguarico River. By the late 1970s, colonization had reduced the Siona-Secoya to a few small settlements. Pressure on their land increased and success in hunting decreased (Vickers 1982).

The Siona-Secoya's territorial concerns, along with those of all other Oriente Indians, were voiced at a national meeting the Instituto Nacional para la Colonización de la Región Amazónica Ecuatoriana (INCRAE) sponsored (see Uquillas 1979). Social scientists at INCRAE decided to act on the demands for secure tenure and, collaborating with Cultural Survival,

undertook a land demarcation project in the summer of 1980 (see CSN 1980b; Macdonald 1982b, 1983, 1984; Uquillas 1982, 1983, 1985).

To assure adequate land for subsistence hunting, as well as land usable for market-oriented economic activities, a plan was developed which linked communally-owned land suitable for market-oriented economic activities with a national faunal reserve that could be used only for subsistence hunting and fishing. By linking communally owned land to a national faunal reserve, the land demarcation project helped to protect the faunal reserve by providing a populated buffer zone against encroaching colonists while also allowing the Indians access to pristine forest for subsistence hunting and fishing, and giving them privately-owned land that could be modified for cash crops or other market-oriented activities. At the time the Siona-Secoya required non-Indian political support to claim their land. Their communities were not formally organized and their more numerous and more well-organized Shuar and Quichua neighbors were not yet in a position to advise and assist less well-organized groups. The Siona-Secoya were thus vulnerable to claims on their land, and unable to remove 12 colonists' families who had squatted in the middle of their territory. These colonists' presence delayed the land titling and the Siona-Secoya regarded themselves as powerless to evict the settlers.

The political situation on the Aguarico, and throughout the Oriente, changed radically in 1982, when the Confederación de Nacionalidades Indígenas de la Amazonía Ecuatoriana (CONFENIAE) or Confederation of Indian Nations of the Ecuadorian Amazon was formed. CONFENIAE, originally a union of the Federación de Centros Shuar, formed in the early 1960s, and several lowland Quechua organizations (see CONFENIAE 1984), that had also existed for several years, began to work with Siona-Secoya communities in 1983. Meetings and training sessions helped them to organize and develop strategies to defend their rights to land and natural resources. By late 1983, the Aguarico settlements had consolidated to form the Organización de Indígenas Siona-Secoya del Ecuador (OISSE) or Organization of Indigenous Siona-Secoya of Ecuador.

OISSE's immediate concern was to obtain clear title to the Siona-Secoya's land, a desire obstructed by the settler families, now 26, who were situated in the middle of the land the Instituto Ecuatoriano de Reforma Agraria y Colonización (IERAC) had demarcated for the Siona-Secoya. The amount of land that the "settlers" had cleared and worked hardly constituted a major improvement. They were simply entrepreneurs and most of their activities initially focused on illegal logging operations. It would have been easy to argue that no permanent presence had been established and, therefore, that the Siona-Secoya had the right to evict the invaders.

The Siona-Secoya's argument for evicting the settlers was strengthened by the settlers' involvement in cocaine trading. Aguarico settlers had been involved, irregularly, in cocaine trafficking for several years. Ecuadorian cocaine trafficking in general was peripatetic; however, by 1983 several of those who had settled on Siona-Secoya land, including some Colombians,

had established permanent trafficking operations, including a small coca plantation and a cocaine paste processing plant. Police first observed these activities in August 1983, when Siona-Secoya leaders greatly concerned by this intrusion, led them to the site. When the police returned to formally investigate the operation, they found the settlers armed. Shortly thereafter the Colombians who had established and controlled the operation apparently decided it was better to move their operations elsewhere; more effective policing activities could have been mobilized if drug-related incidents on the Aguarico escalated, since additional forces were nearby due to the extensive petroleum exploitation in the area.

Coca production disappeared but the episode, nevertheless, impeded the Siona-Secoya leadership's ability to organize its ethnic federation. Of the 247 Indians who lived in the immediate area, three families participated in the cocaine trade. They sported luxury personal goods and purchased a series of Yamaha outboard motors which soon sat attached to wooden planks in various states of disrepair, like trophy heads or museum pieces. Materially, cocaine had provided few lasting benefits for the Siona-Secoya entrepreneurs.

Politically, however, their alliance with the cocaine producers temporarily ruptured the intercommunity solidarity essential for strengthening OISSE and its efforts to secure title to their land by removing the invaders. The Indians who had joined the traffickers had done so against the community leaders' expressed will. Such links, and the self-interest that stimulated them, brought the community's "get rich quick" segment into direct conflict with those concerned with more long-range goals — strengthening their ethnic organization, linking themselves more closely with CONFENIAE, protecting their frontiers against an expanding African Palm agribusiness (see CONFENIAE 1986; Meentzen 1986), and in general, working toward a secure and sustainable future.

Cocaine and Indian Economic Activities

The Asháninca and Siona-Secoya cases illustrate leaderships concerned primarily with economic development, which although far less lucrative than the cocaine trade, is tied to secure land tenure and sustainable resource management. This raises two significant questions:

- 1) Regardless of the risks and the leaders' attitudes, could cocaine profits produce the desired ends more quickly than small-scale, market-oriented economic activities?
- 2) What would such profits produce in political as well as economic terms?

Both the Ene Campa and the Siona-Secoya are linked, to a certain extent, to the market economy. So are most other Amazonian Indians. Once initiated, involvement in the market economy generally increases. The economic activities currently underway among both groups are small-scale, and do not produce high returns. Why not shift to large-scale coca production or cocaine processing and simply get rich?

As noted, a few individuals and their families have become directly in-

volved in production and processing. Yet there was no general shift in economic focus or broad intensification of production such as occurs in parts of Peru and Bolivia in response to severe economic hardship. What then motivates these individuals' decisions? What, in turn, do they do with the money? In these cases, individual decision making can be inferred from general spending patterns. The use of cash obtained from coca production or cocaine processing shows strong parallels with that of remittances, i.e., cash that those who obtain employment outside of their family's or group's traditional territory and economy, return home. Recent research indicates that "as much as two thirds of repatriated savings are spent on housing" (CSQ 1983:8). However, observers have noted that these expenditures do not provide basic shelter for the homeless but serve mainly to embellish or upgrade the *appearance* of an existing dwelling. The bulk of the remaining cash is spent on clothing, debt repayment, appliances and perceived "luxury" goods (Macdonald 1984:200). By contrast, "insignificant amounts go to the purchase of industrial or agricultural equipment, items that might increase local productivity. . . . Most observers feel that remittances foster a consumer mentality. . . ." (CSQ 1983:8). That is, those who suddenly find themselves with relatively large amounts of cash do not invest in long-term productive activities or similar investments; rather, they become drawn to the glitter of gadgets, the display of cash.

Similar purchasing patterns can be observed regarding cash obtained from cocaine. But to regard "consumerism" as some sort of magnet which attracts individuals as if they were flecks of splintered metal is to reify an observed pattern, and perhaps worse, to assume mindlessness on the part of those who enter the cash economy. A more sympathetic, and certainly more humanistic, analysis of such spending patterns would be to ask, "What else could they do with the money?" or "What opportunities exist for investment in long-term productive activities?"

In this respect, Salomon's study (1973) of Ecuador's Otavalan Indian weavers is useful. While many Andean communities weave excellent textiles, Otavalan weavers are among the most well-known and highly visible in the hemisphere. By almost anyone's standards many of the families and communities are successful entrepreneurs, preparing and marketing local goods for an expanding external market. They have developed a true "manufacturing economy tied to national and even international marketing structures . . ." (Salomon 1973:463). Yet, economically successful Otavalans were not sucked into consumerism. They have invested in agricultural land since the mid- to late nineteenth century. But, in the mid-twentieth century when non-Indian hacienda owners were, for various reasons, willing to sell their land, Indian communities and families who had obtained cash from an expanding weaving market leaped at the opportunity to purchase these properties. Salomon (1973:477) writes,

The most parsimonious explanation of the Otavalan's choices among available innovations . . . is that economic security and autonomy in the form of land ownership is paramount over the enjoyment of consumer goods. . . . The

harnessing of cottage industry to the national market for the purpose of buying land is the current solution to problems of long-standing, the problems of achieving independence in the face of subjugation.

The same goal — independence in the face of subjugation — is shared by most Amazonian groups. Small-scale Amazonian coca production and cocaine processing factories are, in some ways, analogous to Otavalon weaving; both are cottage industries tied to national and international markets. One could argue, therefore, that cocaine could provide Indians with the capital to purchase land encroaching colonists are now taking. As mentioned earlier, Amazonian Indians' primary expressed need is land. Yet critical differences exist between Otavalo and the Amazon which, in turn, help explain the absence of broad Indian involvement in the cocaine trade.

In Otavalo, large landholdings had been under non-Indian domain since the late seventeenth century. Most colonists in the Amazon, by contrast, have arrived in the last 25 years. Amazonian Indians still regard colonists as invaders or squatters, not owners. Lacking formal title, many still are illegal residents. National governments present a different problem. They usually declare themselves *de facto* owners by labeling Amazonian lands *tierras baldias* and claiming the right to determine ownership. Indian organizations, however, argue that much of the land is and always has been Indian territory. To buy the land is to acknowledge alien ownership. Amazonian Indian leaders want neither colonists nor the government to sell or to give them land; rather they ask the government to acknowledge existing ownership through formal titling. Where strong Indian organizations exist or are developing, such arguments prevail. Consequently, Amazonian Indian groups' success in obtaining their principal goals — land and economic self-determination — will depend not on large amounts of cash, but rather on the Indians' ability to develop broad-based ethnic organizations to confront invaders and to engage national governments from a position of relative strength and equality.

Throughout the Amazon Basin such organizations have arisen rapidly over the last decade and, to varying extents, are gaining political strength and sophistication (CSQ 1984; Smith 1985; Reister 1985; Macdonald 1985). In addition to organizing previously disparate communities and entire ethnic groups, most ethnic federations have developed or are developing programs for economic self-sufficiency (e.g., Davis 1986; Chapin 1985). Most are not simply subsistence-oriented but rather focus on obtaining capital for essential purchases without having to either neglect the subsistence base or tie one's self, family or community to local non-Indian elites. Existing or anticipated schemes for economic self-sufficiency will never produce returns equivalent to those of cocaine, but they could eliminate exploitative patron-client ties that perpetuate a politically oppressive status quo. These elites arose as a result of lopsided patron-client ties that took advantage of relatively atomistic family or settlement-oriented forms of political organization which characterized much of the upper Amazon; cocaine production and trafficking simply perpetuates this

pattern and inhibits the growth of ethnic federations and sustainable natural resource development programs.

Cocaine production among most tribal Amazonian Indians is usually an individual or family activity, often undertaken without the consensus of the community and with the open opposition of more far-sighted leaders. This perpetuates or reestablishes an atomistic economic life style, and does little to strengthen local organizations or larger ethnic movements. It is therefore not surprising that Colombia's Regional Indian Council of Vaupes (CRIVA), located in the area of the most intensive Amazonian Indian cocaine trade, is one of Colombia's weakest Indian ethnic federations.

Involvement in illegal economic activities also diminishes the Indians' image as respectable, responsible citizens, and thus allows those threatened by Indian organizations to deprecate them. Such accusations weaken the Indian organizations' ability to claim land, resources and economic assistance.

Finally, as a purely cash-oriented, economic activity, however lucrative it may appear in the short term, cocaine does little to provide a base for long-term economic programs and thus, a sustainable life style. Cocaine trade is simply the current peak in an undulating pattern of boom-and-bust economies endemic in the history of the Amazon Basin which have never benefited Indians.

When individual Amazonian Indians enter into the cocaine trade, they drain the principal source of their strength and unity, and prejudice the perceived legitimacy of their ethnic organizations. Weak as such fledgling groups may be in some areas, they are expanding rapidly. They could guarantee the economic, social and cultural survival of the hemisphere's most threatened groups more than other forms of support. To shy away from the cocaine trade is not to deprive Indians of economic opportunities; instead, noninvolvement allows Indians to concentrate on long-term economic growth and stability, political power in a plural society and cultural survival.

Notes

¹The population rose from 73,900 in 1962 to 173,500 in 1974, a regional increase of 135 percent as opposed to 40 percent nationwide (Uquillas 1983).

Bibliography

- Beauclerk, J.
1983 *Marketing Programme for Campa Asháninca of Lower Ene*. Unpublished ms.
- Chapin, M.
1985 UDIRBI: An Indigenous Project in Environmental Conservation. In T. Macdonald, ed. *Native People and Economic Development*. Occasional Paper No. 16. Cambridge, MA: Cultural Survival.
- Chiriff, A.
1982 Crónica de un Atropello Mal Programado. *Amazonia Indígena* 2(4):3-11.
- CONFENIAE (Confederation of Indian Nations of the Ecuadorian Amazon)
1984 CONFENIAE: An Indian Confederation in Eastern Ecuador. *Cultural Survival Quarterly*, 8(4):18-19.
- 1986 CONFENIAE Denounces Agribusiness in Ecuador – An Open Letter. *Cultural Survival Quarterly*, 10(1):33-37.

- CSN (*Cultural Survival Newsletter*)/CSQ (*Cultural Survival Quarterly*)
- 1980a Ecuador: Land Demarcation. 4(4):10-11.
- 1980b *Tierras Baldías or Reservas for the Campa and Shuar?* 4(3):9-11.
- 1981 Land Rights and Native Communities on the Ene and Tambo Rivers. 5(4):18.
- 1983 Introduction. Winter 7(4):4-9.
- 1984 Organizing to Survive. December 8(4).
- Davis, S.
- 1985 The Ayoréode-Zapacó Communal Sawmill: Social Forestry in Eastern Bolivia. *Grassroots Development*.
- Kendall, S.
- 1985 South American Cocaine Production. *Cultural Survival Quarterly*, 9(4):10-15.
- Macdonald, T.
- 1982a The Campa Case. In Ismaelillo and Robin Wright, eds. *Native Peoples in Struggle*. Bombay, NY: E.R.I.N. Publications.
- 1982b Teoría y metodología para la delimitación de territorios nativos en el Ecuador. In J. E. Uquillas, ed. *Informe Para la Delimitación de Territorios Nativos Siona-Secoya, Cofan y Huaorani*. Quito: Ediciones INCRAE
- 1983 Tierras Indígenas en Ecuador: Un Estudio de Caso. *América Indígena XLIII* (3):555-568.
- 1984 *De Casadores a Ganaderos*. Quito: Ediciones Abya-Yala.
- 1985 *Native People and Economic Development: Six Case Studies from Latin America*. Occasional Paper No. 16. Cambridge, MA: Cultural Survival.
- Meentzen, K.
- 1986 Resisting Land Grabbing in Ecuador. *Cultural Survival Quarterly*, 10(1): 30-32.
- Reister, J.
- 1985 CIDOB's Role in the Self-Determination of the Eastern Bolivian Indians. In T. Macdonald, ed. *Native Peoples and Economic Development*. Occasional Paper No. 16. Cambridge, MA: Cultural Survival.
- Rivera Gutierrez, A., et al.
- 1981 Letter to Dr. Jorge Mario Eastman, Minister de Gobierno, Bogota, Colombia.
- Salomon, F.
- 1973 Weavers of OTAVALO. In D. R. Gross, ed. *Peoples and Cultures of Native South America*. New York: Doubleday. pp. 460-492.
- Smith, R. C.
- 1982 *The Dialectics of Domination in Peru: Native Communities and the Myth of the Vast Amazonian Emptiness*. Occasional Paper No. 8. Cambridge, MA: Cultural Survival.
- 1985 A Search for Unity from Within: Peasant Unions, Ethnic Federations and Indianist Movements in the Andean Republics. In T. Macdonald, ed. *Native Peoples and Economic Development*. Occasional Paper No. 16. Cambridge, MA: Cultural Survival.
- Uquillas, J. E., ed.
- 1979 *La Problemática Socio-Cultural de la Amazonía Ecuatoriana*. Quito: Ediciones INCRAE.
- 1982 *Informe Para la Delimitación de Territorios Nativos Siona-Secoya, Cofan, y Huaorani*. Quito: Ediciones INCRAE.
- 1983 Territorios Indígenas: Manejo de Recursos Naturales en la Amazonía Ecuatoriana. Paper presented at the XI International Congress of the Latin American Studies Association, Mexico, 28 September-2 October.
- 1985 Indian Land Rights and Natural Resource Management in the Ecuadorian Amazon. In T. Macdonald, ed. *Native People and Economic Development*. Occasional Paper No. 16. Cambridge, MA: Cultural Survival.

- Vickers, W. T.
- 1972 Indians, Oil and Colonists: Contrasting Systems of Man-Land Relations in the Aguarico River Valley of Eastern Ecuador. *Latinamericanist*, 8(2).
 - 1976 *Cultural Adaptation to Amazonian Habitats: The Siona-Secoya of Eastern Ecuador*. Ann Arbor: University Microfilms International.
 - 1982 Informe Preliminar Sober las Culturas Siona-Secoya y Cofan y su Situacion de Tenencia de la Tierra. In J. E. Uquillas, ed. *Informe Para la Delimitación de Territorios Nativos Siona-Secoya. Cofan y Huorani*. Quito: Ediciones INCRAE.
- Vickers, W. T., and R. B. Hames, eds.
- 1983 *Adaptive Responses of Native Amazonians*. New York: Academic Press.

GLOSSARY

- Acullicar.** To chew coca.
- Agregados.** Landless Indians who settled in *ayllus* and provided free labor on the lands of the *originarios* in return for usufruct rights on communal property to grow their own crops.
- Aguardiente.** Sugar cane alcohol.
- Alcabala.** Colonial sales tax.
- Alcalde.** Mayor.
- Altiplano.** The high Andean plateau that begins in Peru, encompasses Lake Titicaca and extends to western Bolivia.
- Apukuna*.** Sacred places.
- Ayllu/s*.** Community, communities.
- Basuco.** Coca paste.
- Bolleros.** Middle-class Bolivian youth, commonly university students, who take the coca paste from the production centers and distribute it to the large and growing youth market in the major cities of Bolivia.
- Cargos.** Ritual offices or charges, usually rotated annually among community members.
- Castellanokuna*.** Non-Indian, Spanish-speaking people.
- Cestos.** Baskets.
- Chacchar*.** To chew coca.
- Chicha.** Corn beer.
- Chicheras.** Individuals who manufacture and sell chicha; predominantly Quechua-speaking women from small farms and market towns.
- Cholo.** A social category normally used to define persons of mixed Indian and *mestizo* identity.
- Cocales.** Coca plantations.
- Coguer.** To chew coca.
- Colonos.** Colonists, often refers to landless Indians who live on haciendas.
- Comunidades nativas.** The legally recognized Indian land-holding body established in Peru.
- Contribuyentes.** Male tribute payers of the *ayllus* in the southern Yungas of Bolivia in the post-1880 period.
- Coqueros.** Coca chewers.
- Encomienda.** A royal grant that entrusted a community or communities of Indians to certain Spanish colonists. Encomienda holders were permitted to exact commodity tribute and labor service, or both, from the Indians.
- Forasteros.** Outsiders, often refers to landless Indians who settled in *ayllus* and provided free labor on the lands of *originarios* in return for usufruct rights on communal property to grow their own crops.

- Glisofato.** Goysophate, a herbicide similar to paraquat; one brand is known as Roundup.
- Hacendados.** *Hacienda* owners.
- Hacienda.** Large landed estate.
- Hallpakusunchis*.** Let us chew coca together.
- Hallpay*.** Coca chewing.
- Hampi*.** Medicine.
- Hostia.** The Host; a eucharistic bread.
- Huachu*.** Stone-supported terrace.
- K'intu*.** A bundle of coca leaves.
- Kuraka*.** Indian noble.
- Llanos Orientales.** Eastern lowland plains.
- Llanos.** Plains.
- Machula aulanchis*.** The ancestral grandfathers who control crop fertility.
- Machula*.** Old grandfather.
- Mambear.** To chew coca.
- Mascar.** To chew coca.
- Matobenes.** Local drug trafficking bosses.
- Mayordomos.** Stewards.
- Mestizo.** A person of mixed Indian-Spanish descent.
- Misti*.** *Mestizo*.
- Mit'a*.** Pre-Colombian system of rotational labor service performed for the community or the state.
- Mita.** Colonial system of obligatory rotational labor recruited from Indian communities; based on, but different from, the pre-Columbian *mit'a*.
- Montaña.** High jungle region of the Andean slopes and foothills.
- Monti*.** Lowlands.
- Narcotraficantes.** Narcotics traffickers, drug dealers.
- Oriente.** Ecuadorian Amazon region.
- Originarios.** Primary residents of the *ayllus*.
- Pacha Mama*.** Mother Earth.
- Panllevar.** Food-producing haciendas.
- Paqo*.** A ritual specialist.
- Pasta básica.** Cocaine base.
- Phukuy*.** To blow on the *k'intu* while waving it.
- Pijchear.** To chew coca.
- Piqueros.** *Cholo* itinerant merchants.
- Pisacoca.** Laborers who work in clandestine laboratories crushing coca leaves; often poor, young male peasants.
- Pisadores.** Those who step on or stomp; specifically laborers who work in clandestine laboratories crushing coca leaves; often poor, young male peasants.
- Pisando.** Stepping on or stomping on; the coca paste-making activity involving stomping the leaves with the feet.
- Pizar.** To stomp on or step on.
- Pitillo.** A type of cigarette in which coca paste is mixed with tobacco.

- Pongueaje.** Domestic service normally provided by resident laborers on *haciendas* or similar landholdings.
- Prefectura.** Prefecture. The district governed by a prefect. In Bolivia equivalent to that of a state governor in some countries.
- Puna*.** High Andean grasslands.
- Quipu*.** Knotted cords Andean peoples use to keep statistical and historical records.
- Republiquetas Pichicateras*.** Drug Republics.
- Runa*.** Human being.
- Sami*.** Breath; animating essence of coca leaves.
- Samiyuq*.** One who possesses sami.
- Santa Tira*.** Earth.
- Sepeadores.** Transporters who serve as middlemen and are organized into small traveling groups of 10-20 individuals by local drug trafficking bosses.
- Sepes.** Term used to describe transporters who serve as middlemen, and are organized into small traveling groups of 10-20 individuals by local drug trafficking bosses; name also signifies ant or termite in Bolivia.
- Sindicatos.** Labor unions.
- Sirwinakuy*.** The first stage of marriage.
- Soroche.** Altitude sickness.
- Sulfato.** Coca base.
- Tierras baldías.** Unoccupied lands.
- Tirakuna*.** Sacred places.
- Uywaqniyku*.** The ones who nurture us.
- Ventanilla Siniestre.** Sinister Window; name given to practice in which the Bank of the Republic in Bolivia accepts money from any source with no questions asked.
- Yana*.** Andean social category still poorly understood but generally considered to include people who had lost their membership in an ancestral community and were attached in some way as servants or retainers to members of the community where they currently resided.
- Yanaconas*.** Landless Indians who live on haciendas.

*Quechua Indian language terms. These words can carry a variety of meanings, depending on local usage. The definitions used here apply to the articles in this volume.

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