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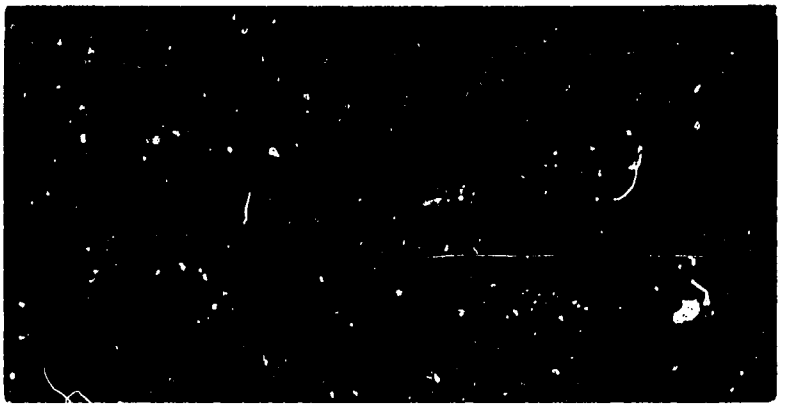

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IMPROVING EPIDEMIOLOGICAL REPORTING IN MOROCCO: A REPORT ON USE OF THE INTERACTIVE STATISTICAL INQUIRY SYSTEM

A Report Prepared By:
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A NOTE FROM THE AUTHORS

This paper is an example of both data analysis and text processing done with an APPLE II microcomputer system. Two user-oriented software packages were employed: the Super-scribe II,* for writing the text, and the Interactive Statistical Inquiry System (ISIS),** for data processing and statistical analysis.

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* Super-scribe II is a trademark of On Line Systems.

** ISIS is distributed by Information Systems International, P.O. Box 1725, Concord, North Carolina 28025. Versions are available in French, Spanish, Arabic, and English.

Part One

PRELIMINARY TRIP REPORT
RABAT, MOROCCO
AUGUST 7-21, 1981

PRELIMINARY TRIP REPORT
RABAT, MOROCCO
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Principal Activities

In accordance with the proposed scope of work, assistance was provided to the Statistical Division of the Ministry of Health (MOH), in Rabat, Morocco, to create and maintain on-line data files, using the Interactive Statistical Inquiry System (ISIS) running on the Apple II microcomputer.

Information from diverse sources was integrated into a provincial file of Morocco. These data are available at the MOH and the USAID mission. The core of the data base consists of epidemiological data (ED) on 16 selected diseases. Listed by province, the data have been made available each year since 1969.

This is one of the standard sets of statistics currently produced by the MOH that can take immediate advantage of electronic data-processing by microcomputers. A demonstration session in the Statistical Division, attended by Drs. Fikri and Khaldi and other personnel of the division, was successful in eliciting interest in the use of the system. Data had been provided in advance of the presentation specifically for entry and manipulation and additional data were brought on the day of the presentation. (Given the well-known difficulties in securing the data before the consultants' arrival, the availability of the statistics was a good omen.)

The advantages of a mechanized system for the manipulation, display, and publication of epidemiological data were presented and discussed. It is fair to assess the presentation as a success, because repeated references were made to the speed with which computations that are usually done laboriously by hand were being performed with a few strokes on the keyboard of a microcomputer.

Currently, the production of the epidemiological data is a handcrafted operation highly dependent on the ability, sensitivity, and stamina of the craftsperson. Very often, highly trained personnel must devote time and energy to this routine process of production of statistics to the detriment of analysis. A microcomputer running a general, user-oriented statistical data-handling package such as ISIS serves the function of the tireless clerk who computes with as much precision in the first hour of the workday as in the last. The time to produce ED can be used fruitfully in analysis and efforts can be redirected to the examination of the reliability and validity of the available data, as well as

the relationships of ED to, for example, health inputs (e.g., the health infrastructure), environmental conditions (e.g., temperature, rainfall, and existence of irrigation), and social structural constraints (e.g., levels of education, income, etc.).

An established ISIS-Apple file can be the cornerstone of an improved system of epidemiological reporting within the MOH. Such a system can be envisioned as having two main functions: monitoring and evaluation.

Monitoring

There is great interest in knowing whether the ISIS-Apple system can provide an "alarm signal" (feu rouge, in the words of Dr. Khaldi) to warn of the initial outbreak of some epidemic disease. The answer is, yes, *provided* that the data can be trusted as a reliable indicator of the spread of a disease. To date, the MOH has not had the means to do fast, efficient checks of trends of incidence rates of a disease by province; nor have data been of sufficient quality to permit such analysis. The MOH now has the former, but not the latter. It is to be hoped that with the availability of a powerful means to analyze the data that have been so faithfully and patiently collected for the last 12 or more years, increased pressures will be brought to bear to improve the data collection system. It is fair to say, and MOH personnel recognize, that current ED do not adequately reflect the health status of the Moroccan population and that vast improvements in the reporting system must be undertaken before any meaningful monitoring of the kind proposed by the MOH can be undertaken.

Evaluation

The long-term goal would be not only the actuarial compilation of ED, but also a modeling of the data's behavior by regions and provinces and of their responsiveness to policy interventions and health inputs. This is an elusive goal, but one of increasing importance in the rational allocation of scarce resources to improve the health status of the Moroccan population.

The unified file structure set up on the ISIS-Apple facilitates the integration of data from diverse sources so that some of these questions can begin to be illuminated, *provided* the data are of a minimal quality. Given both the monitoring and evaluative needs of epidemiological data, one can expect pressures to improve the reporting system.

With the means now available to perform these analyses, it is hoped that some of these assessments will be carried out. (A forthcoming report

on the incidence of water-related diseases, by province, over the last decade in Morocco will examine the data base and the problems of reliability and validity in detail. It is hoped that the techniques of analysis and modeling can be applied to other diseases as well.)

This analytic capability and the initiation of a discussion on the ED reporting system come, it seems to the consultants, at a most appropriate time, given the planned project to improve the management capabilities of the MOH. As the data are analyzed and as specific problems and patterns of data reliability and validity are elucidated, some fruitful discussion ought to be generated on the design, establishment, and institutionalization of an improved data collection capability at the provincial level. Although this is beyond the current scope of work, some assumptions can be proposed that may guide the mission's assistance in this area.

1. The consultants believe that the bottom line in the improvement of the data collection system is management; that is, a productive social organization of the work flow and its timing, sequence, and supervision. Were the kinks removed from the reporting system of ED by province, the scope of available data would not be unimpressive. In other words, the core question is not what other kinds of ED the MOH should be collecting, but how current coverage can be made reliable and valid. Assistance in the management of the relationship between the Ministry of Health in Rabat and the provincial-level office would be an important component of an effort to sort out the elements in an improved management system for the collection of ED.

2. Consideration should be given to the establishment of either terminals or microprocessors in that problematical middle range between province and capital (perhaps in the current planning and economic regions, if these ever come to life administratively). Standard software should be shared for form design and reporting (not only of ED, but also of drug stocks, supplies, personnel, etc.), and the data should be capable of being aggregated in the capital. This action would lead to formation of crucial links between the center and the periphery.

Other Tasks

The consultants had no opportunity to contact Dr. Benyaklef, of the INSEA, because he was on vacation.

It is hoped that Dr. Boutaleb will call on the consultants in the U.S. when he arrives to discuss a plausible system configuration for his

research and hospital management needs. This discussion was begun during the meeting in Rabat.

In helping computerize the records of training participants, the consultants put up the data base for the agriculture and rural development program and worked with staff to set up the file on human resources program participants. Version 2.2 of ISIS is available for these purposes. It includes a powerful and convenient form for generating different "forms," or printouts, under control of the operator.

Plausible Future Tasks

The consultants made two earlier visits to Morocco, both of which seemed to be too short to cope with all the hardware problems and incomplete equipment. During their third visit they successfully built a data base that can be used, it is hoped, for formal training in data analysis--the payoff, in the consultants' view.

The consultants propose to use their analysis of the water-related diseases as a plausible takeoff in the process of analyzing ED. After the system for Dr. Fikri's office is installed and some "settling of the dust" has taken place (i.e., after rates, incidences, and cases have been massaged enough and new data, perhaps, have been input), the consultants may arrange to return to Rabat for a follow-up (in December or January) so that staff can participate in formal sessions on applied statistical analysis of data.

To date, the consultants have operated informally, showing the operation of the system without presenting much information on analysis. Although they have not neglected the "how-do-you-work-the-system" question, they have proposed follow-up so that the question can be addressed, "Now, what do we do with it?" If the mission is ready to place another system (perhaps in INSEA, as was discussed), this would be a good time for formal training in "the tricks of the trade" of data analysis.

Care and Feeding of the Apple Computers

The consultants will take with them the following equipment:

--1 accounting package;

--2 acoustical couplers (to link the Apples with other computers using the phone lines);

--1 serial interface card; and

--2 communications cards.

They will try to get a decent return on these and, it is hoped, trade them for the things that are needed (e.g., better disks to improve the health status of the Apple). They assume that another power cord will be needed for the Apple (one was missing the last time) and a cable to connect the recently arrived monitor to the processor.

The consultants will leave behind the following items:

--copies of the variable dictionary of approximately 300 variables on file;

--diskettes, with data;

--one and one-half boxes (15) of diskettes (Verbatim) that appear to be more reliable than the ones currently in use; and

--copies of the documentation of ISIS (also supplied to Sleeper and Eighmy).

Part Two

AN EXPLORATORY LONGITUDINAL STUDY OF THE REPORTED INCIDENCE OF FOUR WATER-RELATED DISEASES IN MOROCCO (1969-1980)

SUMMARY

This report attempts to apply a multivariate structural model seeking to predict the incidence of four water-related diseases in Morocco. Selected variables from each of three proposed dimensions--natural environment, socioeconomic factors, and health policy sector inputs--are presented in the study of schistosomiasis, dysentery, typhoid, and malaria.

Available longitudinal data on the four diseases for the period 1968-1980, obtained from the Ministry of Public Health of Morocco, are evaluated and used in the model. Although the fit of the model is problematic, given the unevenness of the data, the model is proposed as a contribution to the current discussion of an improved national epidemiological information system. Such a system, if properly designed and supported, should begin to serve as a monitoring and planning tool, with the eventual goal of evaluating health sector interventions.

I. INTRODUCTION TO THE MODEL

I. INTRODUCTION TO THE MODEL

Background for the Study

The complex interrelationships of the health status of populations and socioeconomic development have been the subject of continued study and interest, both as national processes and international comparisons. "Quality of life"-type studies of the latter (e.g., the Public Quality of Life Index from the Overseas Development Council) have frequently included health measures as components of life quality and have sought to relate health to development. This approach treats health sector outputs as another dimension of a broader process of socioeconomic development.

At the national level, the Syncrisis series, among others, has attempted to portray the health sector and its interrelationships with the processes of socioeconomic development. The "dynamics" of these relationships are mostly suggestive, and they are not made explicit in a testable model. Undoubtedly, a basic difficulty is that systematic, comparative data on a large enough number of similar units are spotty and difficult to obtain.

This study attempts a different approach. It proposes an explicit model to predict health outcomes and proceeds to test that model on systematic, comparative data at the provincial level. It treats health outcomes as products of socioeconomic development, and not as components of the process. Although the current report deals only with the epidemiological data on the incidence of four water-related diseases in Morocco, the model is general enough to serve as an heuristic device in the examination of other health outcomes.

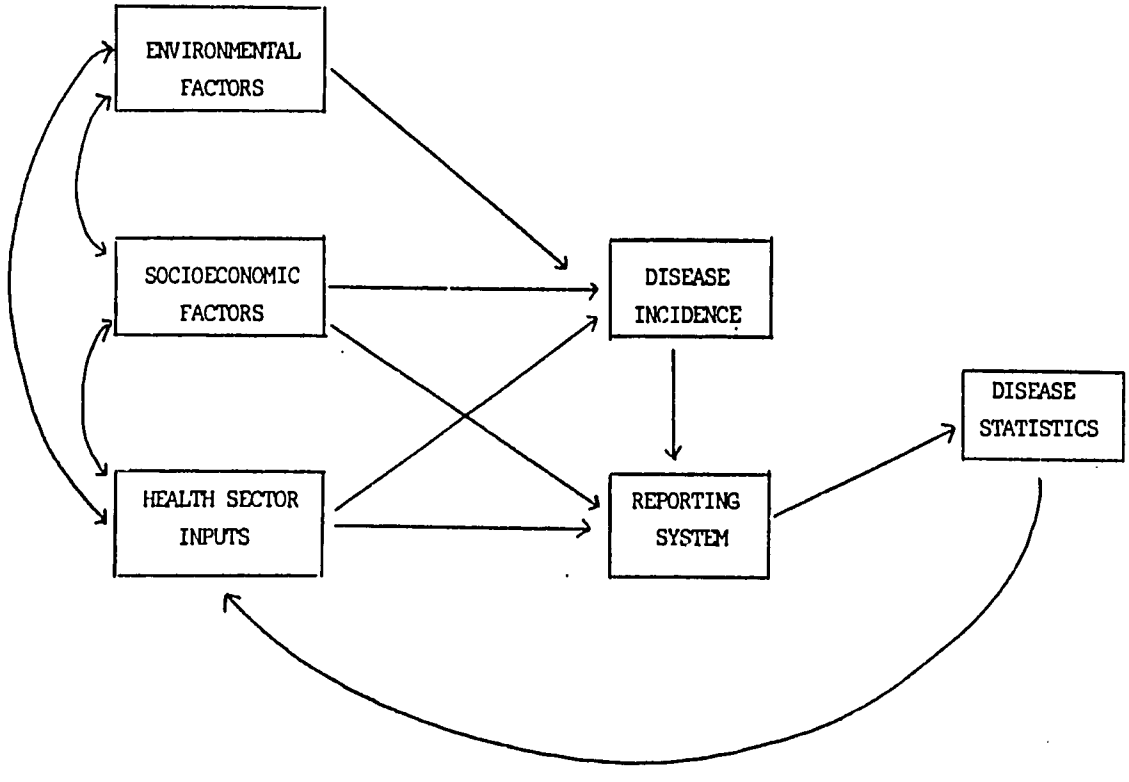
The Model

The causal explanation of health outcomes is approached here from a "structural" perspective: Relationships among social system characteristics are postulated to have an impact on the rates of incidence of schistosomiasis, dysentery, typhoid, and malaria. In addition, the effect of the epidemiological data collection system on the reported rates of incidence is explicitly recognized in the model presented in Figure 1.

Three general dimensions are considered: the natural environment, socioeconomic conditions, and health inputs. Provinces of Morocco exhibit substantial variation in these characteristics; thus, one would expect them to affect the rates of incidence of the diseases under consideration.

Figure 1

A STRUCTURAL MODEL OF EPIDEMIOLOGY STATISTICS



Certain environmental conditions provide a more conducive habitat for vectors of disease transmission. At least the following factors would appear to have an impact on the incidence of schistosomiasis, dysentery, typhoid, and malaria:

--existence of open bodies of water, brackish and stagnant, which may provide breeding places for snails and mosquitos;

--access and use of this same water by large numbers of human population and animals (e.g., ponds, irrigation projects, open springs and water wells, and rivers); and

--warm climate amenable to mosquitos and snails.

In addition to the physical environment, socioeconomic conditions relating to human activities, living conditions, and general standard of living are likely to affect disease transmission and control. These become contextual variables within which the health care system must operate. The model takes these factors explicitly into account. The measurement and identification of these social system constraints become an important priority of health policy because increased expenditures in the sector may not translate into better health outcomes. One would hypothesize that variables such as those that follow would be related to incidence of these diseases:

--dense population, low socioeconomic status, and housing characteristics, such as running water, latrines, indoor bathrooms, etc.;

--community facilities, such as potable water and sewage systems, waste disposal methods, etc.; and

--low levels of education.

The health inputs can be seen as interventions to modify the environmental conditions (both the physical environment and conditions related to the socioeconomic milieu) for prevention as well as for ex post facto treatment. Positive health inputs to intercept the natural course of health degradation might include such factors as:

--health and sanitary education in the school, in the community, and through mass media;

--environmental sanitation projects, such as eradication of mosquito breeding places, control of schistosomiasis snails, potable water provision and maintenance, latrine construction, etc.; and

--health workers and facilities. Contact of the population with health personnel and the availability of clinics and other patient facilities should aid in the control of disease.

These three dimensions, environmental conditions, socioeconomic milieu, and health inputs, can ideally be combined in a single model to predict the reported incidence of disease. To be complete, such a model needs to include a fundamental predictor of these rates: the epidemiology reporting system. Variations in rates of incidence over time or cross-sectionally may be attributed more directly to the data collection procedures and changes in implementation than to true changes in the rates. A useful model should aim to provide an appropriate assessment of these effects.

Although the model includes feedback loops (i.e., health inputs are affected by disease incidence), the statistical treatment in this paper ignores these and uses single-stage least-squares procedures instead of the desirable two-stage least-squares. The unevenness of the data at this point did not warrant the more precise techniques.

Specific representative variables that could be used to reflect these dimensions may include health inputs, environmental factors, and socioeconomic variables.

1. Health Inputs

These are the health sector policy variables that can, in principle, be subjected to intervention. They are:

--infrastructure for health services (equipment, supplies, and amount of expenditure per capita);

--curative facilities, including hospitals (beds per capita), clinical services, and pharmacies;

--health personnel, such as doctors, nurses, paramedics, and trained teachers;

--preventative actions (vaccinations, health education, etc.);

--nutritional levels;

--family planning activities;

--environmental sanitation;

--development of potable water and sewage systems; and

--mosquito- and snail-control activities.

2. Environmental Factors

Environmental factors are natural variations in the geographic environment. Among these are:

--rainfall, altitude, and temperature;

--sustenance base;

--major crops and industrial activities; and

--irrigation and use of environment.

3. Socioeconomic Variables

Socioeconomic variables include demographic and social aggregate characteristics of the population. Among these are:

--demographic factors (e.g., age and sex structure, population density and distribution (urban/rural), and structure and size of urban service centers);

--education (e.g., literacy rates by sex, mean levels of education);

--incomes per capita, resource consumption, and level of living measures;

--housing types and attributes (e.g., running water, bathrooms, electricity, etc.);

--ethnic groups and minority status (because their differential cultural and biological factors impinge on the incidence of diseases); and

--community-level facilities, such as services and infrastructure, transportation networks, revenue, and expenditures per capita.

II. THE INDEPENDENT VARIABLES

II. THE INDEPENDENT VARIABLES

Considering the long list of possible variables that could be considered in a model of incidence of water-related diseases and its requirements for data availability, the task to measure each of the dimensions has to be necessarily selective.

A limited model of 10 independent variables will be presented here, using only representative measures from each of the three major dimensions. The criteria for their inclusion were largely determined by their ready availability, and not by their suitability to the model from a theoretical perspective. Also, they have not been selected on the basis of their congruence to measurement validity or reliability. These independent variables were used primarily to illustrate the use of the model and the kinds of data that would be desirable for modeling purposes.

Environmental Variables

Three variables were chosen to represent the environmental dimension and to provide a measure of the degree to which the province provided the necessary ingredient of water as a basis for water-related disease. The three variables are identified below.

1. Average rainfall, by province, 1975-1980.

   The Agricultural Sector Survey (AID/Rabat, 1981) provides these systematic data, as well as the following two measures for the environmental dimension.

2. Existence of large-scale irrigated perimeters in 1981.

   This information also is taken from the Agricultural Sector Survey.

3. Percent of rural population dependent on irrigated agriculture as a sustenance base.

The agricultural sector study (p. 17) based its calculation of the population dependent on irrigated agriculture on a statistical service estimate (Recensement Agricole, 1973-1974, November 1976) and a "panel" procedure. The panel used a list of cercles (administrative units) with their rural population in 1971, an administrative map showing the cercle boundaries and a population distribution map derived from the 1971 census,

and maps of irrigated and forested areas. The panel comprised both Moroccans and Americans who had traveled extensively in the country and used these maps to estimate the percentage of rural population dependent on irrigation.

Socioeconomic Variables

The 1971 census provides a number of measures of level of living based on types of housing and basic amenities. The original list of socioeconomic variables used in the model included four such measures: the percentage of the dwelling units classified as baraques (shanties or hovels); the percentage of dwellings with running water; the percentage of dwellings with installed bathrooms; and the percentage of dwellings with electricity in 1971. Two of these variables, percentage of dwellings with electricity and percentage of dwellings with bathrooms, were subsequently dropped because their high intercorrelation with the other independent variables would produce multi-collinearity in the regression equation, yielding biased estimators.

The five socioeconomic variables which were used in the final model were:

- Population Distribution

  1. Percent Rural, 1978-1980 (Maroc en Chiffres).

  2. Density of Agricultural Population (Agricultural Sector Study).

- Level of Education

  3. Illiteracy Rate of Population 10 Years and Older in 1971 (Annuaire Statistique, 1979).

- Level of Living

  4. Percent of Households Living in Structures Classified as Baraques (Annuaire Statistique, 1979)

  5. Percent of Households with Running Water (Annuaire Statistique, 1979).

Health Input Variables

Two indicators of health inputs were available as representative measures: the numbers of public and private doctors in 1979, and projected investments in potable water, 1979-1980 (Plan de Developpement, 1978-1980).

In using the first indicator, the intention was to provide a measure of all medical doctors practicing in a province. Figures for the number of doctors working for the Santé Publique were combined with doctors listed as working for private clinics in the 1979 Annuaire Statistique. It is quite possible that this is not a valid measure of available medical personnel, because some doctors may well be employed in both the public and private sectors. To alleviate this possible problem, the regression equations were run once with all 10 independent variables and once without this variable purporting to measure medical service availability. As it turned out, neither the inclusion nor exclusion of the variable made a significant difference in results.

The second health input variable is an imperfect indicator of environmental sanitation, but it was the only one available to tap this important component and had to be used in the absence of data on installed potable water systems.

III. THE DEPENDENT VARIABLES

III. THE DEPENDENT VARIABLES

The dependent variables in this study are the reported incidence of four water-related diseases: schistosomiasis, typhoid, dysentery, and malaria. Data on the number of cases of each disease reported by province for each of the 12 years of the period under study were provided by the Ministry of Public Health. Information also was provided on 12 other contagious communicable infections.

Schistosomiasis can be contracted by bathing or coming into contact with contaminated bodies of water in which larvae hosted in snails penetrate the human skin, usually while the person is working, bathing, or wading in water. The larvae enter the bloodstream and migrate to the lungs, liver, and abdominal cavity and eggs are deposited in the urinary bladder or lumen of the bowel. Eggs are discharged in the urine and feces of infected persons and, if disposal of these wastes reaches bodies of fresh water containing snails that act as intermediate hosts, the infection is perpetuated. Environmental sanitation emphasizing the proper disposal of human wastes, improved irrigation and agricultural practices, reduction of snail populations by drainage and filling, treatment of snail-breeding areas, and provision of sources of uncontaminated water for drinking, bathing, and washing clothes are the most practical and effective means of treatment. Public health measures devoted to the treatment of infected persons in areas of high prevalence can help to reduce transmission, but they will not result in a practical, long-term reduction in prevalence.

Dysentery is another disease related to poor environmental sanitation. It, too, is transmitted by contaminated water containing cysts from infected persons. Preventative measures involve improvement of the living environment, sanitary disposal of human feces, and protection of public water supplies against fecal contamination. Potable drinking water, health education in personal hygiene, and sanitary practices in food preparation are common methods of control.

Typhoid is also commonly transmitted by water or food which has been contaminated by feces or urine from infected persons. Protection of water supplies from contamination and chlorination of water sources to eliminate typhoid bacilli are important measures for controlling typhoid. Also of importance are control of fly-breeding, through elimination of open garbage dumps, and education of the public concerning sources of infection.

Malaria, unlike the three diseases described above, is not directly related to contaminated sources of water, but to mosquitos which commonly breed in brackish bodies of water. Sanitary improvements in the environment, including the filling or draining of breeding habitats, as well as spraying projects in which entire communities apply residual insecticides

yearly until malaria is eliminated are undertaken to control and eradicate malaria.

For each of the four diseases, the attention is drawn to elimination and prevention of cases focusing upon environmental sanitation, community education, and community involvement in efforts to bring a halt to epidemics of these disorders. Incidence of each of these illnesses should reflect differential environmental conditions, such as the location of large, open sources of water which could serve as breeding areas of snails or mosquitos and which would be susceptible to contamination by human excreta. Low levels of living in general, high population density, and low levels of education are the general ecological criteria for areas where one would expect to find increased incidence of these maladies.

The incidence rates of the diseases under study were calculated for four time periods: 1969-1971, 1972-1974, 1975-1977, and 1978-1980. The number of cases reported by province for each of the three years in a period were summed and then divided by the total population for the same period, as estimated by official statistical sources. The resulting averaged incidence rate has the advantage of stabilizing the estimate of cases per 100,000 population and eliminating fluctuations resulting from provinces which did not report any statistics during a given year, or which, perhaps, perceived they had a veritable epidemic on their hands. The three-year average of case incidence smooths out some of the fluctuations caused by the reporting system and tends to stabilize the rates so that general patterns can be detected without concern for the ups and downs of individual years.

IV. ANALYSIS

IV. ANALYSIS

Regional Distribution of Reported Cases

A. Schistosomiasis

Reported cases of schistosomiasis during the period 1969-1971 were concentrated in four provinces which reported 97 percent of all cases. The breakdown is:

Province	Percentage of All Cases
Agadir	56%
Ouarzazate	17%
Errachidia	14%
Marrakech	10%

This same skewed distribution holds for the 1972-1974 period, with the number of reported cases in Agadir rising more than fivefold, from 3,234 reported cases for the three years, 1969-1971, to 17,578 reported cases for 1972-1974. Especially surprising is the reported total of 12,774 cases for Agadir in 1973. During this time, the province of Agadir included all the territory to the south. Beginning in 1975, new provinces carved out of this southern region, namely, Tiznit and Benimelal, began to account for a great decrease in the number of reported cases in Agadir during the period 1975-1977. (See Appendix A, Table 1.)

Nador, a province on the northern Mediterranean coast, also reported a significant number of cases of schistosomiasis during this period, making a total of seven provinces reporting a notable number of cases of this parasitic disease. During the latest period, 1978-1980, five more provinces began reporting a significant number of cases of schistosomiasis. These are El Kalla, Tetouan, Tata, Tan Tan, and Figuig.

B. Dysentery

During the first period under study, 1969-1970, there was a widespread distribution of reported cases of dysentery, with 20 provinces reporting a large number of cases. Kenitra province reported the largest absolute number of cases, which accounted for 29 percent of all reported cases in the country. Sixteen percent of all reported cases were in

Agadir, 11 percent in Fes, and 9 percent in Errachidia. (See Appendix A, Table 2.)

During the 1972-1974 period, Agadir reported 19,249 cases, or 18 percent of the total number of cases for the country. Kenitra reported a total of 10,367 cases of dysentery for 1972 and 1973, but no cases were recorded after that period.

No reports of dysentery are available for 1975 and, after that date, very few provinces show any cases. Reporting becomes very spotty. For the 1978-1980 period, only three provinces, Laayonne (southern coast), Settat (just south of Casablanca), and Boulmane, consistently reported a significant number of cases for all three years.

The sudden change in reported cases of dysentery after the 1975 blackout of information raises the question that changes in definition or procedures for diagnosis and reporting may have altered the distribution. Although it is possible that many cases were lumped into the general category of dysentery before 1975, giving inflated statistics, it appears that regional variation in cases after 1975 may be related to variation in the reporting system.

C. Typhoid

Compared to the highly skewed distribution of schistosomiasis and the abrupt changes in the regional pattern of dysentery, reports of typhoid are more consistent, with fewer gaps and no years skipped. The most significant year was 1969, with 11,700 reported cases. (See Appendix A, Table 3.)

Recent years do not reach this number, but approximate 4,000 cases yearly, with a high of 6,500 cases in 1979 and a low of 3,000 cases in 1980.

D. Malaria

Period I, 1969-1971, represents the peak of 23,508 cases reported nationwide. This number was reduced drastically to only 600 cases during each of the last two time periods, 1975-1977 and 1978-1980.

A single province, Khemisset, accounted for 80 percent of reported cases during the 1978-1980 period.

During the 1975-1977 period, cases were more widely distributed, with 20 provinces reporting cases. However, Ouarzazate and Khemisset reported the largest number of cases, 36 percent and 12 percent of total cases, respectively. (See Appendix A, Table 4.)

It should always be remembered that the reported cases being analyzed are only raw reported cases, not confirmed cases. It is possible that some provinces may be reporting all suspected cases when closer investigation would find that this overrepresents the number of actual confirmed cases.

Incidence Rates

The absolute number of cases of a disease is important from the perspective of health management activities for the provision of medical services (work load of available medical personnel and provision of medical supplies for treatment). From an epidemiological point of view, the risk of exposure, measured by the probability of incidence, is of greater significance. Therefore, incidence rates per 100,000 population are calculated to examine the risk of exposure in provincial populations.

National averages for the incidence rates of the four diseases over the four time periods are estimated from the reported cases. These are obtained from the provincial rates and are presented together with the national total of reported cases in Table 5. (See Appendix A, Table 5.)

The rate of incidence of schistosomiasis was 12.08 per 1,000 during the first period, 1969-1971, and stabilized in the mid-twenties through 1980.

The incidence rates of dysentery exhibit wide fluctuations during the period of the study, from 236 cases per 100,000 in 1969-1971, to 3 per 100,000 in 1975-1977. The former rate is particularly high when one considers that no cases were reported in 1971, one of the component years. No cases were reported in 1975 either, but this cannot fully account for the artificially low rates. Clearly, the incidence rates of dysentery are more affected by the data collection system than are the other diseases. Fluctuations appear to be more an artifact of reporting than of actual variations.

Rates of incidence of typhoid appear to have declined from a high of 56 per 100,000 to rates around the twenties. The same trend is present in the incidence rates of malaria, from a high of almost 48 cases per 100,000, to less than 2 per 100,000 at the end of the period.

Considering now the incidence rates by provinces instead of the national aggregates, Table 6 presents the information for all diseases through the time under consideration. (See Appendix A, Table 6.)

A value of -99 is assigned in the file for provinces which were not in existence or for which no reporting system was operative during the time period.

The incidence rates of schistosomiasis by provinces range from 0, indicating that no cases were reported during the three years that make up each of the time periods, to highs of 478 cases per 100,000 population in Agadir in 1972-1974 and 415 cases per 100,000 population in Tiznit during 1972-1974, once this became a separate province from Agadir. Such high incidence rates, which point to widespread infection of the population, indicate a need for a concentration of attention by provincial health personnel, and perhaps special intervention by the Ministry of Health, in special public health and environmental sanitation efforts to deal with the epidemic.

The highest incidence rates of malaria were reported during the earliest period, 1969-1971, in El Jadida, with 119.8, and the adjacent province of Settat, with 115.2. These provinces are located on the coast just to the south of Casablanca. By the 1978-1980 time period, the reported incidence of malaria had been reduced to 0 for El Jadida and .33 for Settat. Only Khemisset, with 37.96, and Tata, with 9.36, were reporting significant proportions of the population affected by malaria by the latest period.

During the period preceding 1975, epidemics of dysentery were reported by many provinces. Kenitra had a reported incidence rate of 817.23 for the earliest period, and Agadir and Errachidia both reported rates greater than 500 per 100,000 population. By 1978-1980, only seven provinces were reporting a significant incidence of dysentery, with the highest in Boulmane, with 188.57, and Tata, with 120.68. Other provinces reporting elevated incidence of dysentery include Tan Tan, with 98.63; Settat, with 58.15; Khenifra, with .34; Errachidia, with 23.75; and Khouribga, with .23.

Incidence rates for typhoid are more evenly distributed. The highest reported incidence in 1969-1971 was in Rabat-Sale, with 228.54, presumably a function of the more efficient reporting system. By 1978-1980, the rate for Rabat had diminished to 12.48, but Boulmane still reported a high of 81.62, followed by Marrakech with 63.62.

Disease Intercorrelations

Available longitudinal data on incidence rates at the provincial level may provide some clues as to the shifting patterns of the geographic distribution of a disease. This factor can be examined via the correlations of the provincial rates of incidence over time. Tables 7 through 10 present these intercorrelations for each one of the maladies under study. (See Appendix A, Tables 7-10.)

Values of correlation coefficients can fluctuate between 0 and 1.00. A value of 0 would indicate that there is no association; in this case, it would indicate that the rate of incidence of a disease in a province

cannot be predicted by its rate at an earlier period. In this extreme form, the lack of association of rates over time would indicate a random geographic distribution of a disease, with no specific pattern. This is an unlikely result for a nation. A coefficient of 1.00 would indicate that there is a perfectly predictable pattern of distribution and that it remains stable over time. The same provinces that exhibited high rates of incidence at Period I would remain high at the next. A negative sign in the correlation would indicate a shift: Provinces that ranked high initially would now rank the lowest, and vice versa.

The expectation is that the intercorrelation of the rates of incidence of a disease over time should be positive, indicating some stability in geographic distribution by province. In addition, they should be moderate to strong (e.g., between .50 and .80, other things being equal). Deviations from this pattern could indicate outbreaks of epidemics in certain areas which would disturb the more "normal" rates and ranks of provinces; success of selected regional policy interventions in altering the ecological distributions; long-term historical shifts in the pattern of geographic distribution with small, incremental changes; and variations in the reporting system, either at the national level or in the provincial capacity to report and diagnose disease.

As may be seen in Table 7, the correlation of the rates of incidence of schistosomiasis by provinces in the period 1969-1971 (listed in the file as taux d'incidence du bilharziose - TXBIL69/71) decreases slowly over time, indicating, perhaps, a gradual shift in regions. The incidence rates of the 1972-1974 period show practically no correlation with the incidence rates of 1978-1980, and a small correlation with the rate for the 1975-1977 period. Besides the shifts in the number of provinces reporting (observed under the correlation coefficient and in parentheses), some clues to these sharp variations in between-time periods may be derived from the examination of the reported cases of schistosomiasis (see Table 1). Agadir, for example, appears to have reported only 126 cases of the disease in 1976--a figure 42 times lower than that reported the year before. As Tiznit begins to report cases earlier encompassed under Agadir, the size of the correlation will tend to increase at later time periods.

Rates of incidence of dysentery and typhoid (see Tables 8 and 9) appear to be more stable over time, without the swings observed in schistosomiasis. Overall, there appears to be a smooth decrease in the size of the coefficients with the passage of time.

The correlations among the rates of incidence of malaria (paludism) over time exhibit the greatest variation (see Table 10). It is possible that the selected, intensive interventions of the Ministry of Health in its campaign against this disease have succeeded in altering the geographic pattern.

In addition to the consistency of the geographic pattern of distribution over time, one may consider the association among the four diseases, because all are related ostensibly to water, especially contaminated and standing bodies of water. (See Appendix A, Tables 11-14.)

It is gratifying to find that, indeed, there is a positive correlation between schistosomiasis and dysentery for each of the four time periods (.48, .43, .15, and .46). Although the Pearson r coefficients are not exceedingly high, they do indicate a strong degree of association, considering problems with quality of data. The lowest coefficient of .15 is for the 1975-1977 period, which was a time of transition; many new provinces were created then and no cases of dysentery were reported for the year 1975.

A moderate negative association of schistosomiasis and malaria is revealed during the first two periods (-.32 and -.22) based on 20 provinces, but this turns to a positive correlation of .30 based on 28 provinces for 1975-1977, and .17, with 33 provinces, for the latest period.

Neither a relationship nor a slight negative association was found between schistosomiasis and typhoid; however, a slight negative relationship was evident between malaria and typhoid (-.18, -.04, -.22, and -.15) for each of the periods, respectively.

No pattern of association between malaria and dysentery was found, but an inconsistent relationship between dysentery and typhoid was revealed as "none" (-.03) for the first period, "negative" (-.28 and -.11) for the middle periods, and "positive" (.38) for 1978-1980.

One concludes that there is no clear interrelationship among the reported incidences of the four diseases under study, as evidenced by the current data, although where one finds high incidences of schistosomiasis one can expect to find increased incidence of dysentery. One should be prepared for both.

Intercorrelation Among Predictors

Table 15 presents a list of the independent variables and their values for each province, the units of analysis of the present study. Sources and full names of each variable are supplied at the bottom of the table. (See Appendix A, Table 15.)

The variation in rainfall goes from 100 mm. to 1,872 mm., with an unweighted mean of 468 mm. A code of 1 indicates the presence of irrigated perimeters in the province. A total of nine provinces report having at least one irrigated perimeter. The percentage of the rural population dependent on irrigated agriculture ranges from 0 percent to almost 17

percent, with an unweighted average of 4 percent. The percentage of rural population goes from almost 6 percent to 100 percent, the unweighted mean being 69 percent. The density of the population in agriculture varies from a low of 0, which indicates mostly the absence of data, to a high of 774 persons per kilometer. The illiteracy rate also exhibits a low of 0 for the same reasons and a high value of 90 percent. The percentage of the population living in baraques has a similar range, from 0 percent to 29 percent, while that of houses with running water goes from the same number to a high value of almost 80 percent. Finally, the last two variables present the number of doctors employed in both the public and private sectors and the monetary investments in potable water for the 1978-1980 period.

The correlation matrix for all these variables is presented in Table 16. (See Appendix A, Table 16.)

Scanning the matrix of correlations for the 10 selected independent variables, one may verify the relatively low levels of association. Exceptions to this general rule are the association of .92 between percentage rural (V254) and percentage of illiteracy (V285), indicating, as one would expect, that both are measuring the same underlying phenomenon, and the negative correlation of -.79 between number of doctors (V249) and percent rural.

In conclusion, the generally low sizes of the intercorrelations show the relative independence of the dimensions proposed in the model and should reduce the likelihood of multicollinearity biasing the estimates of the coefficients in the multiple regression analysis.

The Multiple Regression Model

The net impact of each of the independent variables, holding the other variables constant, can best be estimated within the context of multiple regression. Extreme care should be taken in interpreting these coefficients in the present context because of the irregularities found in the data reporting system. The application of the model under these circumstances is more heuristic and illustrative than substantive. It is presented here primarily to suggest kinds of analyses and answers that could be provided to important questions, particularly as these may affect policy.

Tables 17 through 20 present the results of the multiple regression model applied to each one of the rates of incidence of the diseases. (See Appendix A, Tables 17-20.)

It should be pointed out that this model is strictly "structural" and does not concern itself with individuals. Because the units of analysis are the provinces of Morocco, the reader should be guarded against

the well-known "ecological fallacy" of assuming that relationships sustained at the group level can be applied to individuals. Thus, if there is a high association between illiteracy and dysentery, it would be wrong to conclude, on the basis of this evidence, that illiterate persons are more likely to contract dysentery. The appropriate inference would be, simply, that those provinces with high rates of illiteracy are more likely to have high rates of dysentery.

An examination of the general fit of the model made on the basis of the coefficient of determination, R-square, shows that the prediction of the rates of incidence of schistosomiasis and malaria is fairly efficient. Fifty-nine percent of the variation of schistosomiasis at the provincial level and 51 percent of the variation of malaria are "explained" by the model. The prediction of the incidence of dysentery and typhoid rates is not so high, reaching approximately 19 percent of total possible variation which may be attributed to the variables in the equation.

A closer examination of the predictive power of the variables in the equations reveals that some contribute little to the explanation of the dependent variable, once the effects of all the other predictors are taken into account. This is true for the rainfall variable (Pluviometr, V235) and the investments in potable water for the years 1978-1980 (Ineav78/80, V265).

The existence of irrigated perimeters in the province appears to be positively related to the incidence of schistosomiasis, but negatively related to the other diseases. Illiteracy is positively related to the incidence of dysentery and typhoid. Where there is high illiteracy, there is high incidence of both diseases. Illiteracy has no relationship with malaria and it is negatively related to schistosomiasis, suggesting, perhaps, that the latter malady is more prevalent in relatively literate provinces where, in addition, there are irrigated perimeters.

The percentage of households with running water is systematically correlated negatively with all diseases. Its importance is most often greater than the presence of doctors, thus indicating a tighter causal linkage with implications for policy.

V. CONCLUSIONS AND IMPLICATIONS

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To the consultants' knowledge, this has been the first attempt to look at the fit of a structural model to predict health outcomes using selected epidemiological data for Morocco. The model posits the existence of three general dimensions or constructs: natural environment, socioeconomic factors, and health sector inputs which are presumed to affect the four water-related diseases under study.

It cannot be said at this point that the model is or is not supported by the data, for the following reasons:

1. There was not much choice in the inclusion of independent variables to represent the different dimensions of the model. More "data-dredging" has to be done at this level to ferret out available information at the provincial level that might be usable.

2. The independent variables that were used were dated or had less than ideal operationalization procedures for their measurement. Greater precision in the latter and the availability of data from the most recent census should improve these conditions.

3. The reporting system at the provincial level raises serious questions about the reliability and validity of the epidemiological data. This is a delicate task under the best of circumstances, but in Morocco it has the added burden of trying to cope with fluid political boundaries which are continuously shifting and modifying the landscape. New provinces are constantly being carved out of parts of adjacent provinces, making the assignment of population totals and areas, to say nothing of the partition of other aggregate data such as incidences, problematic.

The major goal in presenting the model has been to show its heuristic value for organizing rather dispersed pieces and bits of information in a more meaningful way. At least part of this task has been accomplished by establishing machine-readable files on selected diseases which can lay the foundation for a fuller epidemiological information system. This has been done systematically for the provinces of Morocco, and the file and the tools now exist for others to access, study, and add to the file. It is hoped that as both the quantity and quality of variables in the file increase, this model will serve as a starting point.

The regression techniques should certainly be improved to take into account the feedback effects of the incidence of a disease on health inputs, for example. The two-stage least squares estimating procedures

should be used in this case, instead of the simple ones used here. Similarly, well-thought-out transformations should correct the unevenness of the distribution of some of the variables.

It would be naive to concentrate energies on the refinement of the model before the epidemiological data collection system at the provincial level has been overhauled. The challenge is how to make the reported disease statistics more congruent with the "true" incidences. Is the rate of underreporting more or less the same by provinces? By diseases? What are those rates? Although all these questions raise the issue of reliability (i.e., how well do we measure, and how stable are those measurement procedures), one needs to consider the other twin of measurement: validity. What proportion of cases may be misclassified at diagnosis?

At the same time, a new level of aggregation for data collection purposes below the provincial level may be needed to cope with the continuous creation of new units carved out of old provinces. Otherwise, these changes will play havoc with the systematic study of trends, as they have done in the past. At a minimum, standardized, institutionalized procedures need to be devised to disaggregate the data when the political changes in boundaries make this a necessity.

Although the mechanization of the data collection system for epidemiology may produce more timely statistics, the fundamental issues will have to be addressed and resolved successfully before the system can be called to perform its planning, monitoring, and evaluative functions. This would be a modest contribution to the many tasks that lie ahead.

BIBLIOGRAPHY

Berenson, Abram S. Control of Communicable Diseases in Man. 12th Ed. Washington, D.C.: American Public Health Association, 1975.

Kingdom of Morocco, Direction of Statistics. Annuaire Statistique, 1979.

Kingdom of Morocco, Ministry of the Interior, Direction of Statistics. Maroc en Chiffres.

Kingdom of Morocco, Ministry of Public Health. Unpublished Epidemiological Statistics.

Kingdom of Morocco, Secretariat d'Etat au Plan et au Developpement Regional. Plan de Developpement Economique et Social 1978-80. Vol. II.

The Overseas Development Council. The Public Quality of Life Index. Washington, D.C.

Sleeper, Jonathan A., Thomas H. Eighmy, and M'Hamed Hanafi. Dryland Agriculture Sub-Sector Strategy, Morocco. USAID/Morocco, October 1, 1981.

Weissman, Juliana. Syncrisis - The Dynamics of Health - XXII, Kingdom of Morocco. Rockville, Maryland: Public Health Service, Office of International Health, 1977.

APPENDICES

Appendix A

TABLES

Table 1

REPORTED CASES OF SCHISTOSOMIASIS BY PROVINCES FOR 1969-1980

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V140 BILHARZ69	V141 BILHARZ70	V142 BILHARZ71	V143 BILHARZ72	V144 BILHARZ73	V145 BILHARZ74
1 AGADIR	881	1167	1186	3744	12774	1060
2 AL HOCEIMA	0	0	0	0	0	0
3 AZILAL	-99	-99	-99	-99	-99	-99
4 BENIMELAL	3	0	17	9	103	88
5 BENSLIMANE	-99	-99	-99	-99	-99	-99
6 BOUJDOUR	-99	-99	-99	-99	-99	-99
7 BOULMANE	-99	-99	-99	-99	-99	-99
8 CHAOUEN	-99	-99	-99	-99	-99	-99
9 EL JADIDA	0	0	10	0	44	0
10 EL KELAA	-99	-99	-99	-99	-99	3
11 ERRACHIDIA	255	335	250	274	223	129
12 ESSAOUIRA	-99	-99	-99	-99	-99	-99
13 ESSEMARA	-99	-99	-99	-99	-99	-99
14 FES	4	0	3	0	2	1
15 FIGUIG	-99	-99	-99	-99	-99	-99
16 GUELMIM	-99	-99	-99	-99	-99	-99
17 KENITRA	3	18	30	15	2	4
18 KHEMISSET	-99	-99	-99	-99	-99	28
19 KHENIFRA	-99	-99	-99	-99	-99	1
20 KHOURIBGA	0	0	0	0	0	0
21 LAAYOUNE	-99	-99	-99	-99	-99	-99
22 MARRAKECH	243	166	198	107	101	64
23 MEKNES	0	1	0	0	0	1
24 NADOR	1	0	0	0	0	0
25 OUARZAZATE	387	501	88	242	165	440
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99
27 OUJDA	0	0	0	0	0	0
28 SAFI	0	0	2	2	0	1
29 SETTAT	0	0	0	1	0	0
30 TANGER	0	0	0	1	1	0
31 TAN TAN	-99	-99	-99	-99	-99	-99
32 TAOUNATE	-99	-99	-99	-99	-99	-99
33 TATA	-99	-99	-99	-99	-99	-99
34 TAZA	0	1	0	0	0	4
35 TETOUAN	11	3	20	19	1	1
36 TIZNIT	-99	-99	-99	-99	-99	-99
37 CASABLANCA	1	2	2	0	0	1
38 RABAT-SALE	5	10	4	1	0	0
TOTAL	1794	2204	1810	4415	13416	1826

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V140	BILHARZ69	INCIDENCE DU BILHARZIOSE EN 1969
V141	BILHARZ70	INCIDENCE DU BILHARZIOSE EN 1970
V142	BILHARZ71	INCIDENCE DU BILHARZIOSE EN 1971
V143	BILHARZ72	INCIDENCE DU BILHARIZOSE EN 1972
V144	BILHARZ73	INCIDENCE DU BILHARZIOSE EN 1973
V145	BILHARZ74	INCIDENCE DU BILHARZIOSE EN 1974

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V146 BILHARZ75	V147 BILHARZ76	V148 BILHARZ77	V149 BILHARZ78	V150 BILHARZ79	V151 BILHARZ80
1 AGADIR	5363	126	21	4	27	22
2 AL HOCEIMA	0	0	0	0	0	1
3 AZILAL	0	0	2	0	0	2
4 BENIMELAL	283	147	406	89	343	247
5 BENSLIMANE	-99	-99	0	0	0	0
6 BOUJDOUR	-99	-99	-99	-99	-99	-99
7 BOULMANE	0	0	0	1	0	0
8 CHADUEN	0	0	3	0	0	0
9 EL JADIDA	0	0	1	1	2	0
10 EL KELAA	5	9	30	24	409	116
11 ERRACHIDIA	189	133	162	551	566	383
12 ESSAOUIRA	0	1	0	0	0	38
13 ESSEMARA	-99	-99	-99	-99	-99	-99
14 FES	1	1	1	0	2	0
15 FIGUIG	0	0	1	0	12	60
16 GUELMIM	-99	-99	-99	-99	0	0
17 KENITRA	17	0	3	0	6	7
18 KHEMISSET	0	1	4	0	6	2
19 KHENIFRA	4	2	1	3	0	0
20 KHOURIBGA	0	0	0	0	2	2
21 LAAYOUNE	-99	-99	-99	1	2	0
22 MARRAKECH	30	98	69	154	119	26
23 MEKNES	0	0	0	2	8	0
24 NADOR	384	103	15	0	15	0
25 OUARZAZATE	68	869	168	304	493	338
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99
27 OUJDA	0	1	0	0	0	0
28 SAFI	3	2	0	0	3	1
29 SETTAT	0	3	0	0	3	0
30 TANGER	0	0	0	0	0	36
31 TAN TAN	-99	0	0	6	0	86
32 TAOUNATE	-99	-99	-99	0	0	0
33 TATA	-99	-99	0	112	793	383
34 TAZA	0	1	1	0	0	0
35 TETOUAN	0	1	0	2	0	155
36 TIZNIT	0	3795	264	179	129	53
37 CASABLANCA	0	0	0	0	0	0
38 RABAT-SALE	1	1	7	4	5	9
TOTAL	6348	5294	1159	1437	2945	1967

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V146	BILHARZ75	INCIDENCE DU BILHARZIOSE EN 1975
V147	BILHARZ76	INCIDENCE DU BILHARZIOSE EN 1976
V148	BILHARZ77	INCIDENCE DU BILHARZIOSE EN 1977
V149	BILHARZ78	INCIDENCE DU BILHARZIOSE EN 1978
V150	BILHARZ79	INCIDENCE DU BILHARZIOSE EN 1979
V151	BILHARZ80	INCIDENCE DU BILHARZIOSE EN 1980

Table 2

REPORTED CASES OF DYSENTERY BY PROVINCES FOR 1969-1980

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V54 DYSENTER69	V55 DYSENTER70	V56 DYSENTER71	V57 DYSENTER72	V58 DYSENTER73	V59 DYSENTER74
1 AGADIR	5977	6976	0	5451	9006	4792
2 AL HOCEIMA	54	4	0	75	187	25
3 AZILAL	-99	-99	0	1879	2096	0
4 BENIMELAL	3265	1712	0	0	0	1825
5 BENSLIMANE	-99	-99	0	-99	-99	-99
6 BOUJDOUR	-99	-99	0	-99	-99	-99
7 BOULMANE	-99	-99	0	-99	-99	-99
8 CHAOUEN	-99	-99	0	-99	-99	-99
9 EL JADIDA	1089	1119	0	2614	2264	786
10 EL KELAA	-99	-99	0	-99	-99	435
11 ERRACHIDIA	3835	3354	0	3857	6169	1615
12 ESSAOUIRA	-99	-99	0	-99	-99	-99
13 ESSEMARA	-99	-99	0	-99	-99	-99
14 FES	4296	4147	0	4818	7056	3663
15 FIGUIG	-99	-99	0	-99	-99	-99
16 GUELMIM	-99	-99	0	-99	-99	-99
17 KENITRA	11008	11613	0	4611	5756	0
18 KHEMISSET	-99	-99	0	-99	-99	238
19 KHENIFRA	-99	-99	0	-99	-99	-99
20 KHOURIBGA	364	384	0	628	470	1
21 LAAYOUNE	-99	-99	0	-99	-99	-99
22 MARRAKECH	496	431	0	621	3754	176
23 MEKNES	2345	2946	0	2544	2987	1972
24 NADOR	104	135	0	144	0	5
25 OUARZAZATE	771	750	0	2795	5657	989
26 OUED EDDAHAB	-99	-99	0	-99	-99	-99
27 OUJDA	719	610	0	249	486	514
28 SAFI	86	1182	0	576	163	231
29 SETTAT	1282	1445	0	1015	621	691
30 TANGER	8	18	0	3	3	0
31 TAN TAN	-99	-99	0	-99	-99	-99
32 TAOUNATE	-99	-99	0	-99	-99	-99
33 TATA	-99	-99	0	-99	-99	-99
34 TAZA	1254	1127	0	1039	1355	1254
35 TETOUAN	143	235	0	19	1	32
36 TIZNIT	-99	-99	0	-99	-99	-99
37 CASABLANCA	436	632	0	1149	994	119
38 RABAT-SALE	1090	1466	0	911	2561	408
TOTAL	38622	40286	0	34998	51586	19771

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V54	DYSENTER69	INCIDENCE DE DYSENTERIE EN 1969
V55	DYSENTER70	INCIDENCE DE DYSENTERIE EN 1970
V56	DYSENTER71	INCIDENCE DE DYSENTERIE EN 1971
V57	DYSENTER72	INCIDENCE DE DYSENTERIE EN 1972
V58	DYSENTER73	INCIDENCE DE DYSENTERIE EN 1973
V59	DYSENTER74	INCIDENCE DE DYSENTERIE EN 1974

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

FILE NAME -- MALADIE

	V60 DYSENTER75	V61 DYSENTAR76	V62 DYSENTAR77	V63 DYSENTAR78	V64 DYSENTAR79	V65 DYSENTAR80
1 AGADIR	-99	0	143	0	0	0
2 AL HOCEIMA	-99	0	0	0	0	0
3 AZILAL	-99	0	0	0	0	0
4 BENIMELAL	-99	0	2	0	0	0
5 BENSLIMANE	-99	-99	0	0	0	0
6 BOUJDOUR	-99	-99	124	380	0	25
7 BOULMANE	-99	0	0	95	265	139
8 CHAOUEN	-99	0	0	0	0	0
9 EL JADIDA	-99	0	17	0	0	0
10 EL KELAA	-99	0	0	0	0	167
11 ERRACHIDIA	-99	0	175	107	179	4
12 ESSAOUIRA	-99	85	0	0	0	0
13 ESSEMARA	-99	-99	0	73	604	0
14 FES	-99	0	0	0	0	0
15 FIGUIG	-99	0	0	0	0	0
16 GUELMIM	-99	-99	-99	-99	-99	0
17 KENITRA	-99	0	0	0	0	0
18 KHEMISSET	-99	0	0	0	0	0
19 KHEMIFRA	-99	0	7	0	0	3
20 KHOURIBGA	-99	0	0	3	0	0
21 LAAYOUNE	-99	-99	14	821	677	343
22 MARRAKECH	-99	0	0	0	0	0
23 MEKNES	-99	0	0	1	0	0
24 NADOR	-99	0	0	0	0	0
25 OUARZAZATE	-99	0	0	0	0	0
26 OUED EDDAHAB	-99	-99	-99	-99	-99	0
27 OUJDA	-99	151	0	0	0	0
28 SAFI	-99	0	30	0	0	0
29 SETTAT	-99	0	474	359	458	399
30 TANGER	-99	0	0	0	0	0
31 TAN TAN	-99	0	0	25	73	88
32 TAOUNATE	-99	-99	-99	0	0	0
33 TATA	-99	-99	0	348	0	26
34 TAZA	-99	0	0	0	0	0
35 TETOUAN	-99	0	0	0	0	0
36 TIZNIT	-99	0	47	8	0	0
37 CASABLANCA	-99	0	0	0	0	0
38 RABAT-SALE	-99	0	0	0	0	0
TOTAL	0	236	1033	2220	2256	1194

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V60	DYSENTER75	INCIDENCE DE DYSENTERIE EN 1975
V61	DYSENTAR76	INCIDENCE DE LA DYSENTERIE EN 1976
V62	DYSENTAR77	INCIDENCE DE LA DYSENTERIE EN 1977
V63	DYSENTAR78	INCIDENCE DE LA DYSENTERIE EN 1978
V64	DYSENTAR79	INCIDENCE DE LA DYSENTERIE EN 1979
V65	DYSENTAR80	INCIDENCE DE LA DYSENTERIE EN 1980

Table 3

REPORTED CASES OF TYPHOID BY PROVINCES FOR 1969-1980

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

FILE NAME -- MALADIE

	V67 TYPHOID69	V68 TYPHOID70	V69 TYPHOID71	V70 TYPHOID72	V71 TYPHOID73	V72 TYPHOID74
1 AGADIR	1479	476	201	179	181	196
2 AL HOCEIMA	106	98	8	145	59	80
3 AZILAL	-99	-99	-99	-99	-99	-99
4 BENIMELAL	265	216	0	163	142	190
5 BENSLIMANE	-99	-99	-99	-99	-99	-99
6 BOUJDOUR	-99	-99	-99	-99	-99	-99
7 BOULMANE	-99	-99	-99	-99	-99	-99
8 CHAOUEN	-99	-99	-99	-99	-99	-99
9 EL JADIDA	271	377	153	323	5	0
10 EL KELAA	-99	-99	-99	-99	-99	111
11 ERRACHIDIA	526	217	0	188	93	136
12 ESSAOUIRA	-99	-99	-99	-99	-99	-99
13 ESSEMARA	-99	-99	-99	-99	-99	-99
14 FES	507	428	226	170	283	249
15 FIGUIG	-99	-99	-99	-99	-99	-99
16 GUELMIM	-99	-99	-99	-99	-99	-99
17 KENITRA	990	951	42	142	17	19
18 KHEMISSET	-99	-99	-99	-99	-99	109
19 KHENIFRA	-99	-99	-99	-99	-99	116
20 KHOURIBGA	55	29	0	64	254	40
21 LAAYOUNE	-99	-99	-99	-99	-99	-99
22 MARRAKECH	1744	1113	829	709	797	-99
23 MEKNES	1286	833	307	377	327	255
24 NADOR	0	7	0	2	2	33
25 OUARZAZATE	186	37	0	6	0	22
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99
27 OUJDA	216	91	52	64	45	17
28 SAFI	278	239	191	140	160	423
29 SETTAT	655	324	0	301	345	154
30 TANGER	474	411	202	275	105	85
31 TAN TAN	-99	-99	-99	-99	-99	-99
32 TAOUNATE	-99	-99	-99	-99	-99	-99
33 TATA	-99	-99	-99	-99	-99	-99
34 TAZA	295	177	0	181	140	0
35 TETOUAN	306	629	62	312	167	148
36 TIZNIT	-99	-99	-99	-99	-99	-99
37 CASABLANCA	782	920	576	645	819	914
38 RABAT-SALE	1319	1881	572	610	228	243
TOTAL	11740	9454	3421	4996	4169	3540

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V67	TYPHOID69	INCIDENCE DE LA FIEVRE TYPHOID EN 1969
V68	TYPHOID70	INCIDENCE DE LA FIEVRE TYPHOID EN 1970
V69	TYPHOID71	INCIDENCE DE LA FIEVRE TYPHOID EN 1971
V70	TYPHOID72	INCIDENCE DE LA FIEVRE TYPHOID EN 1972
V71	TYPHOID73	INCIDENCE DE LA FIEVRE TYPHOID EN 1973
V72	TYPHOID74	INCIDENCE DE LA FIEVRE TYPHOID EN 1974

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V73 TYPHOID75	V74 TYPHOID76	V75 TYPHOID77	V76 TYPHOID78	V77 TYPHOID79	V78 TYPHOID80
1 AGADIR	378	296	435	607	199	149
2 AL HOCEIMA	83	37	5	65	48	24
3 AZILAL	0	0	102	27	29	9
4 BENIMELAL	165	82	84	79	50	44
5 BENSLIMANE	-99	-99	0	0	42	93
6 BOUJDOUR	-99	-99	-99	-99	-99	-99
7 BOULMANE	0	0	0	26	66	124
8 CHAOUEN	0	3	33	3	100	27
9 EL JADIDA	0	139	213	61	507	33
10 EL KELAA	100	204	365	234	280	425
11 ERRACHIDIA	0	0	83	3	95	163
12 ESSAOUIRA	0	16	4	1	223	52
13 ESSEMARA	-99	-99	-99	-99	-99	-99
14 FES	78	41	8	88	546	94
15 FIGUIG	0	0	3	0	-99	3
16 GUELMIM	-99	-99	-99	1	-99	-99
17 KENITRA	131	66	29	9	213	21
18 KHEMISSET	49	71	15	8	148	1
19 KHENIFRA	0	0	89	57	133	1
20 KHOURIBGA	47	89	59	0	59	41
21 LAAYOUNE	-99	-99	-99	-99	1	9
22 MARRAKECH	592	610	802	790	721	830
23 MEKNES	261	162	418	396	324	133
24 NADOR	0	0	22	17	24	5
25 OUARZAZATE	48	6	32	97	62	48
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99
27 OUJDA	17	64	9	11	136	107
28 SAFI	602	659	259	259	402	200
29 SETTAT	107	0	233	55	431	64
30 TANGER	213	90	114	126	139	118
31 TAN TAN	-99	0	0	8	29	3
32 TAOUNATE	-99	-99	-99	0	420	4
33 TATA	-99	-99	0	7	1	2
34 TAZA	136	110	110	64	68	17
35 TETOUAN	207	22	5	16	144	10
36 TIZNIT	0	10	6	1	24	39
37 CASABLANCA	509	851	491	1141	788	74
38 RABAT-SALE	194	202	74	95	133	91
TOTAL	3917	3830	4102	4352	6585	3058

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V73	TYPHOID75	INCIDENCE DE LA FIEVRE TYPHOID EN 1975
V74	TYPHOID76	INCIDENCE DE LA FIEVRE TYPHOID EN 1976
V75	TYPHOID77	INCIDENCE DE LA FIEVRE TYPHOID EN 1977
V76	TYPHOID78	INCIDENCE DE LA TYPHOID EN 1978
V77	TYPHOID79	INCIDENCE DE LA FIEVRE TYPHOID EN 1979
V78	TYPHOID80	INCIDENCE DE LA TYPHOID EN 1980

REPORTED CASES OF MALARIA BY PROVINCES FOR 1969-1980

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V80 PALUDISM69	V81 PALUDISM70	V82 PALUDISM71	V83 PALUDISM72	V84 PALUDISM73	V85 PALUDISM74
1 AGADIR	9	3	4	14	25	19
2 AL HOCEIMA	22	26	23	7	4	4
3 AZILAL	-99	-99	-99	-99	-99	-99
4 BENIMELAL	621	558	867	650	121	80
5 BENSLIMANE	401	-99	-99	-99	-99	-99
6 BOUJDOUR	-99	-99	-99	-99	-99	-99
7 BOULMANE	-99	-99	-99	-99	-99	-99
8 CHAOUEN	-99	-99	-99	-99	-99	-99
9 EL JADIDA	0	560	1700	669	47	2
10 EL KELAA	-99	-99	-99	-99	-99	10
11 ERRACHIDIA	22	15	36	19	6	6
12 ESSAOUIRA	-99	-99	-99	-99	-99	-99
13 ESSEMARA	-99	-99	-99	-99	-99	-99
14 FES	1073	700	384	91	1	17
15 FIGUIG	-99	-99	-99	-99	-99	-99
16 GUELMIM	-99	-99	-99	-99	-99	-99
17 KENITRA	1727	713	775	539	114	43
18 KHEMISSET	-99	-99	-99	-99	-99	91
19 KHENIFRA	-99	-99	-99	-99	-99	9
20 KHOURIBGA	0	201	601	378	112	112
21 LAAYOUNE	-99	-99	-99	-99	-99	-99
22 MARRAKECH	358	314	2974	1812	446	37
23 MEKNES	514	520	534	331	56	44
24 NADOR	40	9	1	8	3	43
25 OUARZAZATE	465	165	107	107	49	69
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99
27 OUJDA	102	176	46	63	393	226
28 SAFI	541	304	379	321	94	32
29 SETTAT	926	573	1043	914	120	45
30 TANGER	0	0	0	0	1	0
31 TAN TAN	-99	-99	-99	-99	-99	-99
32 TAOUNATE	-99	-99	-99	-99	-99	-99
33 TATA	-99	-99	-99	-99	-99	-99
34 TAZA	703	199	55	18	6	2
35 TETOUAN	42	11	8	2	2	0
36 TIZNIT	-99	-99	-99	-99	-99	-99
37 CASABLANCA	131	108	591	452	63	18
38 RABAT-SALE	170	172	186	151	22	[illegible]
TOTAL	7867	5327	10314	6546	1685	913

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V80	PALUDISM69	INCIDENCE DU PALUDISM EN 1969
V81	PALUDISM70	INCIDENCE DU PALUDISM EN 1970
V32	PALUDISM71	INCIDENCE DU PALUDISM EN 1971
V83	PALUDISM72	INCIDENCE DU PALUDISM EN 1972
V84	PALUDISM73	INCIDENCE DU PALUDISM EN 1973
V85	PALUDISM74	INCIDENCE DU PALUDISM 1974

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V86 PALUDISM75	V87 PALUDISM76	V88 PALUDISM77	V89 PALUDISM78	V90 PALUDISM79	V91 PALUDISM80
1 AGADIR	17	2	2	0	2	0
2 AL HOCEIMA	0	0	0	2	1	0
3 AZILAL	-99	-99	0	0	0	0
4 BENIMELAL	29	4	2	0	4	2
5 BENSLIMANE	-99	-99	0	0	0	0
6 BOUJDOUR	-99	-99	-99	-9	-99	-99
7 BOULMANE	0	0	0	0	0	0
8 CHAOUEN	0	0	0	0	0	0
9 EL JADIDA	3	0	0	0	0	0
10 EL KELAA	0	0	0	0	0	0
11 ERRACHIDIA	4	6	0	0	0	0
12 ESSAOUIRA	0	0	0	0	0	0
13 ESSEMARA	-99	-99	-99	-9	-99	-99
14 FES	15	0	5	5	0	1
15 FIGUIG	0	0	0	0	0	0
16 GUELMIM	-99	-99	-99	-9	0	0
17 KENITRA	9	19	14	9	12	6
18 KHEMISSET	56	14	3	3	239	246
19 KHENIFRA	12	0	0	0	0	0
20 KHOURIBGA	13	0	0	3	2	0
21 LAAYOUNE	-99	-99	0	0	0	0
22 MARRAKECH	3	0	0	1	0	1
23 MEKNES	21	1	5	3	0	0
24 NADOR	4	0	0	0	0	0
25 OUARZAZATE	51	76	87	10	1	1
26 OUED EDDAHAB	-99	-99	-99	-9	-99	-99
27 OUJDA	17	0	0	0	0	2
28 SAFI	1	0	1	0	0	0
29 SETTAT	15	0	2	1	0	6
30 TANGER	0	0	0	0	0	0
31 TAN TAN	-99	0	0	1	0	0
32 TAOUMATE	-99	-99	-99	0	1	0
33 TATA	-99	-99	0	23	0	6
34 TAZA	5	1	0	0	0	0
35 TETOUAN	1	0	0	1	0	0
36 TIZNIT	0	16	30	1	0	0
37 CASABLANCA	0	0	2	0	0	0
38 RABAT-SALE	2	2	30	0	7	5
TOTAL	278	141	183	63	269	276

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V86	PALUDISM75	INCIDENCE DU PALUDISM EN 1975
V87	PALUDISM76	INCIDENCE DU PALUDISM EN 1976
V88	PALUDISM77	INCIDENCE DU PALUDISM EN 1977
V89	PALUDISM78	INCIDENCE DU PALUDISM EN 1978
V90	PALUDISM79	INCIDENCE DU PALUDISM EN 1979
V91	PALUDISM80	INCIDENCE DU PALUDISM EN 1980

Table 5

REPORTED NUMBER OF CASES AND
AVERAGE REPORTED RATE OF INCIDENCE OF
SCHISTOSOMIASIS, DYSENTERY, TYPHOID, AND MALARIA
FOR EACH TIME PERIOD

	Time Periods			
	1969-1971	1972-1974	1975-1977	1978-1980
SCHISTOSOMIASIS				
Reported Cases	5808	19657	12801	6349
Incidence	12.08	29.63	26.58	24.46
DYSENTERY				
Reported Cases	78908 (1)	106355	1269 (2)	5670
Incidence	236.34	208.73	3.23	15.18
TYPHOID				
Reported Cases	24615	12705	11849	13995
Incidence	56.41	26.20	18.73	22.26
MALARIA				
Reported Cases	23508	9144	602	608
Incidence	47.69	18.20	1.29	1.57

Notes: (1) Not reported in 1971
(2) Not reported in 1975

Table 6

AVERAGE REPORTED RATE OF INCIDENCE PER 100,000 FOR SCHISTOSOMIASIS, MALARIA, DYSENTERY, AND TYPHOID FOR 1969-1971, 1972-1974, 1975-1977, AND 1978-1980

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V245 TXBIL69/71	V246 TXBIL72-74	V247 TXBIL75-77	V248 TXBIL78-80	V267 TXPLD69/71	V268 TXPLD72/74	V269 TXPLD75/77	V270 TXPLD78/80
1 AGADIR	101.62	478.81	211.23	1.89	.5	1.58	.81	.07
2 AL HOCEIMA	0	0	0	.11	9.83	1.93	0	.32
3 AZILAL	-99	-99	.18	.17	-99	-99	-99	0
4 BENIMELAL	1.11	9.54	54.07	39.75	113	40.6	2.26	.35
5 BENSLIMANE	-99	-99	-99	0	-99	-99	-99	0
6 BOUJDOUR	-99	-99	-99	-99	-99	-99	-99	-99
7 BOULMANE	-99	-99	0	.38	-99	-99	0	0
8 CHAOUEN	-99	-99	.36	0	-99	-99	0	0
9 EL JADIDA	.53	2.37	.05	.14	119.8	38.69	.15	0
10 EL KELAA	-99	-99	2.8	32.56	-99	-99	0	0
11 ERRACHIDIA	59.33	42.36	42.86	122.84	5.16	2.1	.89	0
12 ESSAOUIRA	-99	-99	.08	2.8	-99	-99	0	0
13 ESSEMARA	-99	-99	-99	-99	-99	-99	-99	-99
14 FES	.22	.09	.09	.02	67.47	3.2	.58	.07
15 FIGUIG	-99	-99	.33	21.6	-99	-99	0	0
16 GUELMIM	-99	-99	-99	-99	-99	-99	-99	-99
17 KENITRA	1.24	.49	.61	.36	78.28	16.37	1.29	.76
18 KHEMISSET	-99	-99	.42	.62	-99	-99	6.13	37.96
19 KHENIFRA	-99	-99	.84	.34	-99	-99	1.43	0
20 KHOURIBGA	0	0	0	.31	80.47	57.27	1.12	.39
21 LAAYOUNE	-99	-99	-99	-99	-99	-99	-99	-99
22 MARRAKECH	12.73	5.52	5.79	8.12	76.45	46.6	.09	.05
23 MEKNES	.04	.05	0	.44	67.85	17.91	1.27	.13
24 NADOR	.07	0	30.18	.82	3.59	3.57	.24	0
25 OUARZAZATE	62.01	51.87	63.78	64.3	46.83	13.78	12.35	.68
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99	-99	-99
27 OUJDA	0	0	.05	0	17.16	33.68	.82	.09
28 SAFI	.07	.11	.27	.2	43.3	15.81	.11	0
29 SETTAT	0	.05	.14	.14	115.2	51.19	.79	.33
30 TANGER	0	.29	0	3.21	0	.14	0	0
31 TAN TAN	-99	-99	-99	48.79	-99	-99	-99	.53
32 TAOUNATE	-99	-99	-99	0	-99	-99	-99	.06
33 TATA	-99	-99	-99	415.59	-99	-99	-99	9.36
34 TAZA	.06	.22	.11	0	56.1	1.43	.33	0
35 TETOUAN	1.39	.83	.05	7.67	2.49	.16	.05	.05
36 TIZNIT	-99	-99	356.21	33.41	-99	-99	4.04	.09
37 CASABLANCA	.11	.02	0	0	18.4	9.53	.03	0
38 RABAT-SALE	1.15	.05	.39	.7	31.99	8.48	1.46	.47

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V245	TXBIL69/71	TAUX D'INCIDENCE DU BILHARZIOSE 1969-71
V246	TXBIL72-74	TAUX D'INCIDENCE DU BILHARZIOSE 1972-74
V247	TXBIL75-77	TAUX D'INCIDENCE DU BILHARZIOSE 1975-77
V248	TXBIL78-80	TAUX D'INCIDENCE DU BILHARZIOSE 1978-80
V267	TXPLD69/71	TAUX D'INCIDENCE DU PALUDISM 1969-71
V268	TXPLD72/74	TAUX D'INCIDENCE DU PALUDISM 1972-74
V269	TXPLD75/77	TAUX D'INCIDENCE DU PALUDISM 1975-77
V270	TXPLD78/80	TAUX D'INCIDENCE DU PALUDISM 1978-80

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V271 TXDYS69/70	V272 TXDYS72/74	V273 TXDYS76/77	V274 TXDYS78/80	V275 TXTYPH69/7	V276 TXTYPH72/7	V277 TXTYP75/77	V278 TXTYP78/80
1 AGADIR	642.19	524.32	8.12	0	67.75	15.14	42.51	34.06
2 AL HOCEIMA	12.18	37.01	0	0	29.36	36.63	14.78	14.81
3 AZILAL	-99	-99	0	0	-99	-99	9.18	5.5
4 BENIMELAL	402.67	87.07	.19	0	26.59	23.62	21.41	10.13
5 BENSLIMANE	-99	-99	-99	0	-99	-99	-99	25.22
6 BOUJDOUR	-99	-99	-99	-99	-99	-99	-99	-99
7 BOULMANE	-99	-99	0	188.57	-99	-99	0	81.62
8 CHAOUEN	-99	-99	0	0	-99	-99	4.26	14.54
9 EL JADIDA	170.37	305.21	1.28	0	42.48	17.67	17.7	28.44
10 EL KELAA	-99	-99	0	9.9	-99	-99	42.64	55.68
11 ERRACHIDIA	760.74	737.78	22.96	23.75	52.48	28.22	7.35	21.37
12 ESSAOUIRA	-99	-99	10.17	0	-99	-99	1.61	20.33
13 ESSEMARA	-99	-99	-99	-99	-99	-99	-99	-99
14 FES	396.38	456.25	0	0	36.32	20.61	3.66	8.01
15 FIGUIG	-99	-99	0	0	-99	-99	1	-99
16 GUELMIM	-99	-99	-99	-99	-99	-99	-99	-99
17 KENITRA	817.23	243.77	0	0	48.28	4.19	6.94	6.8
18 KHEMISSET	-99	-99	0	0	-99	-99	11.34	12.21
19 KHENIFRA	-99	-99	1.24	.34	-99	-99	10.62	21.46
20 KHOURIBGA	111.81	104.56	0	.23	8.43	34.06	16.86	7.83
21 LAAYOUNE	-99	-99	-99	-99	-99	-99	-99	-99
22 MARRAKECH	28.83	92.41	0	0	77.29	-99	58.92	63.62
23 MEKNES	338.3	311.95	0	.04	104.98	39.87	39.66	37.13
24 NADOR	26.18	9.85	0	0	.5	2.45	1.32	2.52
25 OUARZAZATE	144.58	578.21	0	0	14.17	1.71	4.96	11.73
26 OUED EDDAHAB	-99	-99	-99	-99	-99	-99	-99	-99
27 OUJDA	105.06	61.68	10.68	0	19.01	6.22	4.32	11.07
28 SAFI	65.67	34.32	2.42	0	25.04	25.58	82.78	43.64
29 SETTAT	177.65	110.39	33.45	58.15	44.39	37.95	15.73	26.3
30 TANGER	6.7	.86	0	0	183.67	67.01	40.75	34.1
31 TAN TAN	-99	-99	0	98.63	-99	-99	-99	21.21
32 TAOUNATE	-99	-99	-99	0	-99	-99	-99	26.65
33 TATA	-99	-99	-99	120.68	-99	-99	-99	3.23
34 TAZA	211.08	200.59	0	0	27.67	17.65	19.6	7.77
35 TETOUAN	22.73	2.06	0	0	40.65	24.87	12.47	8.31
36 TIZNIT	-99	-99	6.27	.74	-99	-99	1.4	5.92
37 CASABLANCA	37.37	40.45	0	0	50.51	42.52	29.38	28.59
38 RABAT-SALE	249.12	185.85	[illegible]	0	229.54	51.78	20.13	12.48

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V271	TXDYS69/70	TAUX DE DYSENTERIE 1969-70 (AUCUN CAS 1971)
V272	TXDYS72/74	TAUX DE DYSENTERIE 1972-74
V273	TXDYS76/77	TAUX DE DYSENTERIE 1976-77 (AUCUN CAS 1975)
V274	TXDYS78/80	TAUX DE DYSENTERIE 1978-80
V275	TXTYPH69/71	TAUX DE TYPHOISE 1969-71
V276	TXTYPH72/74	TAUX DE TYPHOIDE 1972-74
V277	TXTYP75/77	TAUX DE TYPHOISDE 1975-77
V278	TXTYP78/80	TAUX DE TYPHOIDE 1978-80

Table 7

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE REPORTED RATE OF INCIDENCE OF SCHISTOSOMIASIS OVER THE FOUR TIME PERIODS

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V245	V246	V247	V248
245 TXBIL69/71		.83	.88	.53
		(20)	(20)	(20)
246 TXBIL72-74			.95	.04
			(20)	(20)
247 TXBIL75-77				.27
				(29)
248 TXBIL78-80				

Table 8

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE
REPORTED RATE OF INCIDENCE OF MALARIA
OVER THE FOUR TIME PERIODS

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V267	V268	V269	V270
267 TXPLD69/71		.75	.09	.32
		(20)	(20)	(20)
268 TXPLD72/74			.02	.22
			(20)	(20)
269 TXPLD75/77				.39
				(28)
270 TXPLD78/80				

Table 9

PRODUCT MOMENT CORRELATION COEFFICENTS OF AVERAGE
REPORTED RATE OF INCIDENCE OF DYSENTERY
OVER THE FOUR TIME PERIODS

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME — MALADIE

CORRELATION MATRIX

VARIABLE	V271	V272	V273	V274
271 TXDYS69/70		.70	.27	.14
		(20)	(20)	(20)
272 TXDYS72/74			.28	.14
			(20)	(20)
273 TXDYS76/77				.15
				(30)
274 TXDYS78/80				

Table 10

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE
REPORTED RATE OF INCIDENCE OF TYPHOID
OVER THE FOUR TIME PERIODS

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V275	V276	V277	V278
275 TXTYPH69/71		.72 (19)	.26 (20)	.29 (20)
276 TXTYPH72/74			.39 (19)	.45 (19)
277 TXTYP75/77				.53 (28)
278 TXTYP78/80				

Table 11

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE REPORTED RATE OF INCIDENCE OF THE FOUR DISEASES IN THE 1969-1971 PERIOD

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V245	V267	V271	V275
245 TXBIL69/71		-.32 (20)	.48 (20)	-.04 (20)
267 TXPLD69/71			.11 (20)	-.18 (20)
271 TXDYS69/70				.03 (20)
275 TXTYPH69/71				

Table 12

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE REPORTED RATE OF INCIDENCE OF THE FOUR DISEASES IN THE 1972-1974 PERIOD

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V246	V268	V272	V276
246 TXBIL72-74		-.22	.43	-.19
		(20)	(20)	(19)
268 TXPLD72/74			-.23	-.04
			(20)	(19)
272 TXDYS72/74				-.28
				(19)
276 TXTYPH72/74				

Table 13

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE REPORTED RATE OF INCIDENCE OF THE FOUR DISEASES IN THE 1975-1977 PERIOD

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V247	V269	V273	V277
247 TXBIL75-77		.30	.15	-.06
		(28)	(29)	(29)
269 TXPLD75/77			-.07	-.22
			(28)	(28)
273 TXDYS76/77				-.11
				(29)
277 TXTYP75/77				

Table 14

PRODUCT MOMENT CORRELATION COEFFICIENTS OF AVERAGE REPORTED RATE OF INCIDENCE OF THE FOUR DISEASES IN THE 1978-1980 PERIOD

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 ***

STUDY NAME -- MALADIE

CORRELATION MATRIX

VARIABLE	V248	V270	V274	V279
248 TXBIL78-80		.17	.46	-.19
		(33)	(33)	(32)
270 TXPLD78/80			.05	-.15
			(33)	(32)
274 TXDYS78/80				.38
				(32)
278 TXTYP78/80				

Table 15

THE INDEPENDENT VARIABLES AND THEIR VALUES BY PROVINCES

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** FILE NAME -- MALADIE

	V254 ZRUR78/80	V235 PLUVIOMETR	V236 PERMIRRIG	V266 ZPOPRIRAG	V263 DENPOPAGR	V265 INEAV78/80	V294 ZBARAQUES	V298 EAU COUR	V285 ANALPHAB	V249 #MEDICIN79
1 AGADIR	77.35	225	1	3.37	241	25175	15.1	38.3	83.1	68
2 AL HOCEIMA	84.86	327	0	0	151	6000	2.2	61.3	82.7	10
3 AZILAL	91.11	561	0	6.74	198	0	.1	14	87.9	18
4 BENIMELAL	68.34	590	1	4.11	115	0	3.7	22.9	78.7	23
5 BENSLIMANE	81.24	475	0	13.56	89	2000	0	0	0	6
6 BOUJDOUR	-99	-99	0	-99	0	-99	0	0	0	0
7 BOULMANE	87.32	512	0	0	372	0	1.4	36	86.4	11
8 CHAOUEN	86.08	1872	0	0	317	0	.5	64	80.2	1
9 EL JADIDA	85.75	366	1	4	104	80000	2.5	32.3	84.7	31
10 EL KELAA	86.75	257	1	4.18	89	8500	.4	21.4	90.1	8
11 ERRACHIDIA	85.8	140	1	3.6	488	2750	.4	40.9	80	15
12 ESSAOUIRA	85.36	295	0	2.24	116	0	.5	45.3	89.2	12
13 ESSEMARA	-99	-99	0	-99	0	-99	0	0	0	0
14 FES	29.98	573	0	.94	194	5825	1.5	51.3	73.6	93
15 FIGUIG	73.01	125	0	2.26	216	0	.01	79.9	79.8	0
16 GUELMIM	-99	132	0	-99	482	-99	0	0	0	0
17 KENITRA	66.06	592	1	4.03	151	5200	17	54.2	75.3	59
18 KHEMISSET	80.13	542	0	0	94	0	29.2	31.1	81.7	15
19 KHENIFRA	72.48	666	0	1.88	135	3250	1.3	33.1	83.9	14
20 KHOURIBGA	51.06	395	0	1.94	101	5000	17.1	28.5	74.3	38
21 LAAYOUNE	-99	-99	0	-99	0	-99	0	0	0	11
22 MARRAKECH	59.75	250	0	7.30	132	18000	.3	43.8	79.8	104
23 MEKNES	42.33	573	0	3.45	100	7500	11.2	41.3	67.2	73
24 NADOR	84.72	329	0	3.86	401	4250	.6	48.2	82	25
25 OUARZAZATE	90.14	419	1	4.23	636	4740	.4	27.4	87.1	12
26 OUED EDDAHAB	-99	-99	0	-99	0	-99	0	0	0	0
27 OUJDA	61.55	335	1	1.49	107	5250	1.1	54.7	68.5	54
28 SAFI	54.41	376	0	16.8	76	9950	.4	23.1	80.7	28
29 SETTAT	78.84	408	0	0	95	5520	15.3	41	84.1	24
30 TANGER	26.02	876	0	.43	177	7500	14.5	42.4	60	83
31 TAN TAN	56.71	100	0	1.3	-99	4500	0	0	0	1
32 TAOUNATE	97.59	901	0	0	186	0	0	0	0	0
33 TATA	100	100	0	0	774	0	0	0	0	0
34 TAZA	80.65	695	0	0	85	1500	6.3	53.5	81.9	18
35 TETOUAN	50.02	747	1	14.52	231	3000	10	54.2	70.5	64
36 TIZNIT	85.86	189	0	12.45	242	6025	.2	53.5	83.4	15
37 CASABLANCA	5.75	443	0	9.82	108	0	12.8	66.4	52.6	440
38 RABAT-SALE	11.26	510	0	5.08	135	56800	17.5	63.2	52.8	284

VARIABLE	SHORT DESCRIPTOR	LONG DESCRIPTOR
V254	ZRUR78/80	% RURAL 1978-1980
V235	PLUVIOMETR	PLUVIOMETRIE 1975-80 (AID AG SECTOR STUDY 1981)
V236	PERMIRRIG	PERIMETRES IRRIGUES (AID AG SECTOR STUDY 1981)
V266	ZPOPRIRAG	PERCENT POP RURALE SUR TERRES IRRIGUEES
V263	DENPOPAGR	DENSITE DE LA POP. AGRICOLE (AG. SECTOR STUDY 81)
V265	INEAV78/80	INVERTISSMENTS EN EAU POTABLE 1978-80 (PLAN DE DEV 1978/80)
V294	ZBARAQUES	% DE MENAGES EN BARAQUES 1971 (AN STAT 79)
V298	EAU COUR	% DE MENAGES AVEC EAU COURANTE 1971 (AN STAT 79)
V285	ANALPHAB	TAUX D'ANALPHABETISM TOTAL 1971 AGEE 10+ (AN STAT 1979)
V249	#MEDICIN79	# DE MEDECINS PRIVES ET PUBLIQUES '79 (AN STAT 79)

Table 16

PRODUCT MOMENT CORRELATION COEFFICIENTS
AMONG THE INDEPENDENT VARIABLES
INCLUDED IN THE MODEL

INTERACTIVE STATISTICAL INQUIRY SYSTEM
*** VERSION 3.0 *** STUDY NAME — MALADIE

CORRELATION MATRIX

VARIABLE	V254	V235	V236	V256	V263	V265	V294	V298	V285	V249
254 ZRUR78/80		-.07	.14	-.22	.38	-.19	-.41	-.32	.92	-.79
		(33)	(33)	(33)	(32)	(33)	(29)	(29)	(29)	(30)
235 PLUVIOMETR			-.11	-.15	-.16	-.12	.09	.13	-.17	-.02
			(34)	(33)	(33)	(33)	(29)	(29)	(29)	(30)
236 PERMIRRIG				.11	.16	.24	-.06	-.23	.12	-.12
				(33)	(37)	(33)	(29)	(29)	(29)	(31)
266 ZPOPRIRAG					-.17	.07	-.15	-.08	-.15	.21
					(32)	(33)	(29)	(29)	(29)	(30)
263 DENPOPAGR						-.18	-.34	.00	.23	-.16
						(32)	(29)	(29)	(29)	(30)
265 INEAV78/80							.10	-.02	-.16	.23
							(29)	(29)	(29)	(30)
294 ZBARAQUES								.03	-.45	.34
								(29)	(29)	(28)
298 EAU COUR									-.46	.47
									(29)	(28)
285 ANALPHAB										-.81
										(28)
249 #MEDICIN79										

Table 17

PREDICTORS OF SCHISTOSOMIASIS: REGRESSION MODEL

```
INTERACTIVE STATISTICAL INQUIRY SYSTEM
        ### VERSION 3.0 ###                                                    STUDY NAME -- MALADIE
-------------------------------------------------------------------------------------------------------
                                                MULTIPLE REGRESSION
-------------------------------------------------------------------------------------------------------

DEPENDENT VARIABLE -- V(248)  TXBIL78-80

COEFFICIENT OF DETERMINATION (R^2)  =    0.5962
COEFFICIENT OF MULTIPLE CORRELATION =    0.7721
STANDARD ERROR OF ESTIMATION        =   21.4912

------- VARIABLES IN THE EQUATION -------

CONSTANT =   111.2846

V(254)  ZRUR78/80                        0.3624
V(235)  PLUVIOMETR                      -0.0224
V(236)  PERMIRRIG                       16.1068
V(266)  ZPOPRIRAG                       -0.0002
V(263)  DENPOPAGR                        0.0911
V(265)  INEAV78/80                      -0.0003
V(294)  ZBARAQUES                       -0.5278
V(298)  EAU COUR                        -0.3712
V(285)  ANALPHAB                        -1.4514
V(249)  #MEDICIN79                      -0.0121

OBSERVATIONS USED = 28
```

Table 18

PREDICTORS OF MALARIA: MULTIPLE REGRESSION MODEL

```
INTERACTIVE STATISTICAL INQUIRY SYSTEM
        ### VERSION 3.0 ###                                                    STUDY NAME -- MALADIE
-------------------------------------------------------------------------------------------------------
                                                MULTIPLE REGRESSION
-------------------------------------------------------------------------------------------------------

DEPENDENT VARIABLE -- V(270)  TXPLD78/80

COEFFICIENT OF DETERMINATION (R^2)  =    0.5130
COEFFICIENT OF MULTIPLE CORRELATION =    0.7163
STANDARD ERROR OF ESTIMATION        =    6.2881

------- VARIABLES IN THE EQUATION -------

CONSTANT =    -6.2726

V(254)  %RUR78/80                        0.1389
V(235)  PLUVIOMETR                       0.0002
V(236)  PERMIRRIG                       -2.4848
V(266)  %POPRIRAG                        0.0659
V(263)  DENPOPAGR                       -0.0004
V(265)  INEAV78/80                       0.0000
V(294)  %BARAQUES                        0.6752
V(298)  EAU COUR                        -0.0692
V(285)  ANALPHAB                        -0.0313
V(249)  #MEDICIN79                       0.0042

OBSERVATIONS USED = 28
```

Table 19

PREDICTORS OF DYSENTERY: MULTIPLE REGRESSION MODEL

```
INTERACTIVE STATISTICAL INQUIRY SYSTEM
        *** VERSION 3.0 ***                                                    STUDY NAME -- MALADIE
-------------------------------------------------------------------------------------------------------
                                                MULTIPLE REGRESSION
-------------------------------------------------------------------------------------------------------

DEPENDENT VARIABLE -- V(274)  TXDYS78/80

COEFFICIENT OF DETERMINATION (R^2)  =    0.1883
COEFFICIENT OF MULTIPLE CORRELATION =    0.4339
STANDARD ERROR OF ESTIMATION        =   41.9008

------- VARIABLES IN THE EQUATION -------

CONSTANT =   -24.8151

V(254)  ZRUR78/80                        0.0976
V(235)  PLUVIOMETR                      -0.0103
V(236)  PERMIRRIG                      -15.1681
V(266)  ZPOPRIRAG                       -1.9526
V(263)  DENPOPAGR                        0.0722
V(265)  INEAV78/80                      -0.0001
V(294)  ZBARAQUES                        0.0180
V(298)  EAU COUR                        -0.2939
V(285)  ANALPHAB                         0.5357
V(249)  #MEDICIN79                       0.0704

OBSERVATIONS USED = 28
```

Table 20

PREDICTORS OF TYPHOID: MULTIPLE REGRESSION MODEL

```
INTERACTIVE STATISTICAL INQUIRY SYSTEM
        *** VERSION 3.0 ***                                                    STUDY NAME -- MALADIE
-------------------------------------------------------------------------------------------------------
                                                MULTIPLE REGRESSION
-------------------------------------------------------------------------------------------------------

DEPENDENT VARIABLE -- V(278)  TXTYP78/80

COEFFICIENT OF DETERMINATION (R^2)  =    0.1900
COEFFICIENT OF MULTIPLE CORRELATION =    0.4359
STANDARD ERROR OF ESTIMATION        =   21.9268

------- VARIABLES IN THE EQUATION -------

CONSTANT =   -23.5317

V(254)  %RUR78/80                        -0.3389
V(235)  PLUVIOMETR                       -0.0021
V(236)  PERMIRRIG                        -2.6115
V(266)  %POPRIRAG                        -0.5465
V(263)  DENPOPAGR                        -0.0017
V(265)  INEAV78/80                        0.0001
V(294)  %BARAQUES                        -0.4571
V(298)  EAU COUR                         -0.3472
V(285)  ANALPHAB                          1.1038
V(249)  #MEDICIN79                        0.0700

OBSERVATIONS USED = 28
```

Appendix B

THE VARIABLES IN THE FILE

Appendix B

THE VARIABLES IN THE FILE

ISIS, VERSION 2.1 NOM DU FICHIER -- MALADIE

VARIABLE 1 TRACHOME68
INCIDENCE DU TRACHOME 68
NULLES -- -99
LARGEUR: 6

VARIABLE 2 TRACHOME69
INCIDENCE DU TRACHOME69
NULLES -- -99
LARGEUR: 6

VARIABLE 3 TRACHOME70
INCIDENCE DU TRACHOME70
NULLES -- -99
LARGEUR: 6

VARIABLE 4 TRACHOME71
INCIDENCE DU TRACHOME71
NULLES -- -99
LARGEUR: 6

VARIABLE 5 TRACHOME72
INCIDENCE DU TRACHOME EN 72
NULLES -- -99
LARGEUR: 6

VARIABLE 6 TRACHOME73
INCIDENCE DU TRACHOME73
NULLES -- -99
LARGEUR: 6

VARIABLE 7 TRACHOME74
INCIDENCE DU TRACHOME74
NULLES -- -99
LARGEUR: 6

VARIABLE 8 TRACHOME75
INCIDENCE DU TRACHOME75
NULLES -- -99
LARGEUR: 6

VARIABLE 9 TRACHOME76
INCIDENCE DU TRACHOME76
NULLES -- -99
LARGEUR: 6

VARIABLE 10 TRACHOME77
INCIDENCE DU TRACHOME 77
NULLES -- -99
LARGEUR: 6

VARIABLE 11 TRACHOME78
INCIDENCE DE TRACHOME EN 1978
NULLES -- -99
LARGEUR: 5

VARIABLE 12 TRACHOME79
INCIDENCE DE TRACHOME EN 1979
NULLES -- -99
LARGEUR: 5

VARIABLE 13 TRACHOME80
INCIDENCE DE TRACHOME EN 1980
NULLES -- -99
LARGEUR: 5

VARIABLE 14 TETANOS68
INCIDENCE DE TETANOS EN 1968
NULLES -- -99
LARGEUR: 3

VARIABLE 15 TETANOS69
INCIDENCE DE TETANOS EN 1969
NULLES -- -99
LARGEUR: 3

VARIABLE 16 TETANOS70
INCIDENCE DE TETANOS EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 17 TETANOS71
INCIDENCE DE TETANOS EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 18 TETANOS72
INCIDENCE DE TETANOS EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 19 TETANOS73
INCIDENCE DE TETANOS EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 20 TETANOS74
INCIDENCE DE TETANOS EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 21 TETANOS75
INCIDENCE DE TETANOS EN 1975
NULLES -- -99
LARGEUR: 2

VARIABLE 22 TETANOS76
INCIDENCE DE TETANOS EN 1976
NULLES -- -99
LARGEUR: 2

VARIABLE 23 TETANOS77
INCIDENCE DE TETANOS EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 24 TETANOS78
INCIDENCE DE TETANOS 1978
NULLES -- -99
LARGEUR: 3

VARIABLE 25 TETANOS79
INCIDENCE DE TETANOS EN 1979
NULLES -- -99
LARGEUR: 3

VARIABLE 26 TETANOS80
INCIDENCE DE TETANOS 1980
NULLES -- -99
LARGEUR: 3

VARIABLE 27 SCARLATN68
INCIDENCE DE SCARLATINE EN 1968
NULLES -- -99
LARGEUR: 3

VARIABLE 28 SCARLATN69
INCIDENCE DE LA SCARLATINE EN 1969
NULLES -- -99
LARGEUR: 3

VARIABLE 29 SCARLATN70
INCIDENCE DE LA SCARLATINE EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 30 SCARLATN71
INCIDENCE DE LA SCARLATINE EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 31 SCARLATN72
INCIDENCE DE LA SCARLATINE EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 32 SCARLATN73
INCIDENCE DE LA SCARLATINE EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 33 SCARLATN74
INCIDENCE DE LA SCARLATINE EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 34 SCARLATN75
INCIDENCE DE LA SCARLATINE EN 1975
NULLES -- -99
LARGEUR: 3

VARIABLE 35 SCARLATN76
INCIDENCE DE LA SCARLATINE EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 36 SCARLATIN77
INCIDENCE DE LA SCARLATINE EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 37 SCARLATN78
INCIDENCE DE LA SCARLATINE EN 1978
NULLES -- -99
LARGEUR: 4

VARIABLE 38 SCARLATN79
INCIDENCE DE LA SCARLATINE EN 1979
NULLES -- -99
LARGEUR: 4

VARIABLE 39 SCARTN80
INCIDENCE DE LA SCARLATINE EN 1980
NULLES -- -99
LARGEUR: 4

VARIABLE 40 POLIO68
INCIDENCE DE LA POLIO EN 1968
NULLES -- -99
LARGEUR: 4

VARIABLE 41 POLIO69
INCIDENCE DE LA POLIO EN 1969
NULLES -- -99
LARGEUR: 4

VARIABLE 42 POLIO70
INCIDENCE DE LA POLIO EN 1970
NULLES -- -99
LARGEUR: 4

VARIABLE 43 POLIO71
INCIDENCE DE LA POLIO EN 1971
NULLES -- -99
LARGEUR: 4

VARIABLE 44 POLIO72
INCIDENCE DE LA POLIO EN 1972
NULLES -- -99
LARGEUR: 4

VARIABLE 45 POLIO 73
INCIDENCE DE LA POLIO EN 1973
NULLES -- -99
LARGEUR: 4

VARIABLE 46 POLIO74
INCIDENCE DE LA POLIO EN 1975
NULLES -- -99
LARGEUR: 4

VARIABLE 47 POLIO75
INCIDENCE DE LA POLIO EN 1975
NULLES -- -99
LARGEUR: 4

VARIABLE 48 POLIO76
INCIDENCE DE LA POLIO EN 1976
NULLES -- -99
LARGEUR: 4

VARIABLE 49 POLIO77
INCIDENCE DE LA POLIO EN 1977
NULLES -- -99
LARGEUR: 4

VARIABLE 50 POLIO78
INCIDENCE DE LA POLIO EN 1978
NULLES -- -99
LARGEUR: 4

VARIABLE 51 POLIO79
INCIDENCE DE POLIO 1979
NULLES -- -99
LARGEUR: 2

VARIABLE 52 POLIO80
INCIDENCE DE POLIO 1980
NULLES -- -99
LARGEUR: 2

VARIABLE 53 DYSENTER68
INCIDENCE DE DYSENTERIE EN 1968
NULLES -- -99
LARGEUR: 4

VARIABLE 54 DYSENTER69
INCIDENCE DE DYSENTERIE EN 1969
NULLES -- -99
LARGEUR: 5

VARIABLE 55 DYSENTER70
INCIDENCE DE DYSENTERIE EN 1970
NULLES -- -99
LARGEUR: 5

VARIABLE 56 DYSENTER71
INCIDENCE DE DYSENTERIE EN 1971
NULLES -- -99
LARGEUR: 2

VARIABLE 57 DYSENTER72
INCIDENCE DE DYSENTERIE EN 1972
NULLES -- -99
LARGEUR: 5

VARIABLE 58 DYSENTER73
INCIDENCE DE DYSENTERIE EN 1973
NULLES -- -99
LARGEUR: 5

VARIABLE 59 DYSENTER74
INCIDENCE DE DYSENTERIE EN 1974
NULLES -- -99
LARGEUR: 4

VARIABLE 60 DYSENTER75
INCIDENCE DE DYSENTERIE EN 1975
NULLES -- -99
LARGEUR: 4

VARIABLE 61 DYSENTAR76
INCIDENCE DE LA DYSENTERIE EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 62 DYSENTAR77
INCIDENCE DE LA DYSENTERIE EN 1977
NULLES -- -99
LARGEUR: 4

VARIABLE 63 DYSENTAR78
INCIDENCE DE LA DYSENTERIE EN 1978
NULLES -- -99
LARGEUR: 4

VARIABLE 64 DYSENTAR79
INCIDENCE DE LA DYSENTERIE EN 1979
NULLES -- -99
LARGEUR: 4

VARIABLE 65 DYSENTAR80
INCIDENCE DE LA DYSENTERIE EN 1980
NULLES -- -99
LARGEUR: 4

VARIABLE 66 TYPHOID68
INCIDENCE DE LA FIEVRE TYPHOID EN 1968
NULLES -- -99
LARGEUR: 5

VARIABLE 67 TYPHOID69
INCIDENCE DE LA FIEVRE TYPHOID EN 1969
NULLES -- -99
LARGEUR: 5

VARIABLE 68 TYPHOID70
INCIDENCE DE LA FIEVRE TYPHOID EN 1970
NULLES -- -99
LARGEUR: 5

VARIABLE 69 TYPHOID71
INCIDENCE DE LA FIEVRE TYPHOID EN 1971
NULLES -- -99
LARGEUR: 5

VARIABLE 70 TYPHOID72
INCIDENCE DE LA FIEVRE TYPHOID EN 1972
NULLES -- -99
LARGEUR: 5

VARIABLE 71 TYPHOID73
INCIDENCE DE LA FIEVRE TYPHOID EN 1973
NULLES -- -99
LARGEUR: 5

VARIABLE 72 TYPHOID74
INCIDENCE DE LA FIEVRE TYPHOID EN 1974
NULLES -- -99
LARGEUR: 5

VARIABLE 73 TYPHOID75
INCIDENCE DE LA FIEVRE TYPHOID EN 1975
NULLES -- -99
LARGEUR: 5

VARIABLE 74 TYPHOID76
INCIDENCE DE LA FIEVRE TYPHOID EN 1976
NULLES -- -99
LARGEUR: 5

VARIABLE 75 TYPHOID77
INCIDENCE DE LA FIEVRE TYPHOID EN 1977
NULLES -- -99
LARGEUR: 5

VARIABLE 76 TYPHOID78
INCIDENCE DE LA TYPHOID EN 1978
NULLES -- -99
LARGEUR: 5

VARIABLE 77 TYPHOID79
INCIDENCE DE LA FIEVRE TYPHOID EN 1979
NULLES -- -99
LARGEUR: 5

VARIABLE 78 TYPHOID80
INCIDENCE DE LA TYPHOID EN 1980
NULLES -- -99
LARGEUR: 5

VARIABLE 79 PALUDISM68
INCIDENCE DU PALUDISM EN 1968
NULLES -- -99
LARGEUR: 4

VARIABLE 80 PALUDISM69
INCIDENCE DU PALUDISM EN 1969
NULLES -- -99
LARGEUR: 4

VARIABLE 81 PALUDISM70
INCIDENCE DU PALUDISM EN 1°70
NULLES -- -99
LARGEUR: 4

VARIABLE 82 PALUDISM71
INCIDENCE DU PALUDISM EN 1971
NULLES -- -99
LARGEUR: 5

VARIABLE 83 PALUDISM72
INCIDENCE DU PALUDISM EN 1972
NULLES -- -99
LARGEUR: 4

VARIABLE 84 PALUDISM73
INCIDENCE DU PALUDISM EN 1973
NULLES -- -99
LARGEUR: 4

VARIABLE 85 PALUDISM74
INCIDENCE DU PALUDISM 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 86 PALUDISM75
INCIDENCE DU PALUDISM EN 1975
NULLES -- -99
LARGEUR: 3

VARIABLE 87 PALUDISM76
INCIDENCE DU PALUDISM EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 88 PALUDISM77
INCIDENCE DU PALUDISM EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 89 PALUDISM78
INCIDENCE DU PALUDISM EN 1978
NULLES -- -9
LARGEUR: 2

VARIABLE 90 PALUDISM79
INCIDENCE DU PALUDISM EN 1979
NULLES -- -99
LARGEUR: 3

VARIABLE 91 PALUDISM80
INCIDENCE DU PALUDISM EN 1980
NULLES -- -99
LARGEUR: 3

VARIABLE 92 ECHINOCO77
INCIDENCE DE L'ECHINOCOCGSE EN 1977
NULLES -- -9
LARGEUR: 2

VARIABLE 93 ECHINOCO78
INCIDENCE DE L'ECHINOCOCGSE EN 1978
NULLES -- -9
LARGEUR: 2

VARIABLE 94 ECHINOCO79
INCIDENCE DE L'ECHINOCOCGSE EN 1979
NULLES -- -9
LARGEUR: 2

VARIABLE 95 ECHINOCO80
INCIDENCE DE L'ECHINOCOCGSE EN 1980
NULLES -- -9
LARGEUR: 2

VARIABLE 96 LEPTOSPR77
INCIDENCE DE LEPTOSPIROSE EN 1977
NULLES -- -9
LARGEUR: 2

VARIABLE 97 LEPTOSPR78
INCIDENCE DE LEPTOSPIROSE EN 1978
NULLES -- -9
LARGEUR: 2

VARIABLE 98 LEPTOSPR79
INCIDENCE DE LEPTOSPIROSE EN 1979
NULLES -- -9
LARGEUR: 2

VARIABLE 99 LEPTOSPR80
INCIDENCE DE LEPTOSPIROSE EN 1980
NULLES -- -9
LARGEUR: 2

VARIABLE 100 MENINGIT68
INCIDENCE DE MENINGITE EN 1968
NULLES -- -99
LARGEUR: 4

VARIABLE 101 MENINGIT69
INCIDENCE DE MENINGITE EN 1969
NULLES -- -99
LARGEUR: 4

VARIABLE 102 MENINGIT70
INCIDENCE DE MENINGITE EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 103 MENINGIT71
INCIDENCE DE MENINGITE EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 104 MENINGIT72
INCIDENCE DE MENINGITE EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 105 MENINGIT73
INCIDENCE DE MENINGITE EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 106 MENINGIT74
INCIDENCE DE MENINGITE EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 107 MENINGIT75
INCIDENCE DE MENINGITE EN 1975
NULLES -- -99
LARGEUR: 3

VARIABLE 108 MENINIT76
INCIDENCE DE MENINGITE EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 109 MENINGIT77
INCIDENCE DE MENINGITE EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 110 MENINGIT78
INCIDENCE DE MENINGITE EN 1978
NULLES -- -99
LARGEUR: 3

VARIABLE 111 MENING79
INCIDENCE DE MENINGITE EN 1979
NULLES -- -99
LARGEUR: 3

VARIABLE 112 MENING80
INCIDENCE DE MENINGITE EN 1980
NULLES -- -99
LARGEUR: 3

VARIABLE 113 LEPRE68
INCIDENCE DE LEPRE EN 1968
NULLES -- -99
LARGEUR: 3

VARIABLE 114 LEPRE69
INCIDENCE DE LEPRE EN 1969
NULLES -- -99
LARGEUR: 3

VARIABLE 115 LEPRE70
INCIDENCE DE LEPRE EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 116 LEPRE71
INCIDENCE DE LEPRE EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 117 LEPRE72
INCIDENCE DE LEPRE EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 118 LEPRE73
INCIDENCE DE LEPRE EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 119 LEPRE74
INCIDENCE DE LEPRE EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 120 LEPRE75
INCIDENCE DE LEPRE EN 1975
NULLES -- -99
LARGEUR: 3

VARIABLE 121 LEPRE76
INCIDENCE DE LEPRE EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 122 LEPRE77
INCIDENCE DE LEPRE EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 123 LEPRE78
INCIDENCE DE LEPRE EN 1978
NULLES -- -99
LARGEUR: 3

VARIABLE 124 LEPRE79
INCIDENCE DE LEPRE EN 1979
NULLES -- -99
LARGEUR: 3

VARIABLE 125 LEPRE80
INCIDENCE DE LEPRE EN 1980
NULLES -- -99
LARGEUR: 3

VARIABLE 126 DIPHTER68
INCIDENCE DU DIPHTERIE EN 1968
NULLES -- -99
LARGEUR: 3

VARIABLE 127 DIPHTER69
INCIDENCE DU DIPHTERIE EN 1969
NULLES -- -99
LARGEUR: 3

VARIABLE 128 DIPHTER70
INCIDENCE DU DIPHTERIE EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 129 DIPHTER71
INCIDENCE DU DIPHTERIE EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 130 DIPHTER72
INCIDENCE DU DIPHTERIE EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 131 DIPHTER73
INCIDENCE DU DIPHTERIE EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 132 DIPHTER74
INCIDENCE DU DIPHTERIE EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 133 DIPHTER75
INCIDENCE DUDIPHTERIE EN 1975
NULLES -- -99
LARGEUR: 3

VARIABLE 134 DIPHTER76
INCIDENCE DU DIPHTERIE EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 135 DIPTHER77
INCIDENCE DU DIPHTERIE EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 136 DIPTHER78
INCIDENCE DU DIPTHERIE EN 1978
NULLES -- -99
LARGEUR: 3

VARIABLE 137 DIPHTER79
INCIDENCE DU DIPHTERIE EN 1979
NULLES -- -99
LARGEUR: 3

VARIABLE 138 DIPHTER80
INCIDENCE DU DIPHTERIE EN 1980
NULLES -- -99
LARGEUR: 3

VARIABLE 139 BILHARZ68
INCIDENCE DU BILHARZIOSE EN 1968
NULLES -- -99
LARGEUR: 4

VARIABLE 140 BILHARZ69
INCIDENCE DU BILHARZIOSE EN 1969
NULLES -- -99
LARGEUR: 4

VARIABLE 141 BILHARZ70
INCIDENCE DU BILHARZIOSE EN 1970
NULLES -- -99
LARGEUR: 4

VARIABLE 142 BILHARZ71
INCIDENCE DU BILHARZIOSE EN 1971
NULLES -- -99
LARGEUR: 4

VARIABLE 143 BILHARZ72
INCIDENCE DU BILHARIZOSE EN 1972
NULLES -- -99
LARGEUR: 4

VARIABLE 144 BILHARZ73
INCIDENCE DU BILHARZIOSE EN 1973
NULLES -- -99
LARGEUR: 5

VARIABLE 145 BILHARZ74
INCIDENCE DU BILHARZIOSE EN 1974
NULLES -- -99
LARGEUR: 4

VARIABLE 146 BILHARZ75
INCIDENCE DU BILHARZIOSE EN 1975
NULLES -- -99
LARGEUR: 4

VARIABLE 147 BILHARZ76
INCIDENCE DU BILHARZIOSE EN 1976
NULLES -- -99
LARGEUR: 4

VARIABLE 148 BILHARZ77
INCIDENCE DU BILHARZIOSE EN 1977
NULLES -- -99
LARGEUR: 4

VARIABLE 149 BILHARZ78
INCIDENCE DU BILHARZIOSE EN 1978
NULLES -- -99
LARGEUR: 4

VARIABLE 150 BILHARZ79
INCIDENCE DU BILHARZIOSE EN 1979
NULLES -- -99
LARGEUR: 4

VARIABLE 151 BILHARZ80
INCIDENCE DU BILHARZIOSE EN 1980
NULLES -- -99
LARGEUR: 4

VARIABLE 152 CONJPURU68
INCIDENCE DE LA CONJONCTIVITE PURULENTE
NULLES -- -99
LARGEUR: 6

VARIABLE 153 CONJNPUR69
INCIDENCE DE LA CONJONCTIVIE PURULENTE EN 1968
NULLES -- -99
LARGEUR: 6

VARIABLE 154 CONJNPUR70
INCIDENCE DE LA CONCUNCTIVITE PURULENTE EN 1970
NULLES -- -99
LARGEUR: 6

VARIABLE 155 CONJNPUR71
INCIDENCE DE LA CONJONCTIVITE PURULENTE EN 1971
NULLES -- -99
LARGEUR: 6

VARIABLE 156 CONJPUR72
INCIDENCE DE LA CONJONCTIVITE PURULENTE EN 1972
NULLES -- -99
LARGEUR: 6

VARIABLE 157 CONJPUR73
INCIDENCE DE LA CONJONCTIVITE PURULENTE EN 1973
NULLES -- -99
LARGEUR: 6

VARIABLE 158 CONJPUR74
INCIDENCE DE LA CONJONCTIVITE PURULENTE EN 1974
NULLES -- -99
LARGEUR: 6

VARIABLE 159 CONJPUR75
INCIDENCE DE LA CONJUNCTIVITE PURULENTE EN 1975
NULLES -- -99
LARGEUR: 6

VARIABLE 160 CONJNPUR76
INCIDENCE DE LA CONJONCTIVITE PURULANTE EN 1976
NULLES -- -99
LARGEUR: 6

VARIABLE 161 CONJPUR77
INCIDENCE DE LA CONJONCTIVITE PURULANTE EN 1977
NULLES -- -99
LARGEUR: 6

VARIABLE 162 CONJPUR78
INCIDENCE DE LA CONJONCTIVITE PURULANTE EN 1978
NULLES -- -99
LARGEUR: 6

VARIABLE 163 CONJPUR79
INCIDENCE DE LA CONJONCTIVITE PURULANTE EN 1979
NULLES -- -99
LARGEUR: 6

VARIABLE 164 CONJPUR80
INCIDENCE DE LA CONJONCTIVITE PURULANTE EN 1980
NULLES -- -99
LARGEUR: 6

VARIABLE 165 FIEVRHM68
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAINE 1968
NULLES -- -99
LARGEUR: 3

VARIABLE 166 FIEVRHM69
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAINE EN 1969
NULLES -- -99
LARGEUR: 3

VARIABLE 167 FIEVRHM70
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAINE EN 1970
NULLES -- -99
LARGEUR: 3

VARIABLE 168 FIEVRHM71
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAINE EN 1971
NULLES -- -99
LARGEUR: 3

VARIABLE 169 FIEVRHM72
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAINE EN 1972
NULLES -- -99
LARGEUR: 3

VARIABLE 170 FIEVRHM73
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1973
NULLES -- -99
LARGEUR: 3

VARIABLE 171 FIEVRHM74
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1974
NULLES -- -99
LARGEUR: 3

VARIABLE 172 FIEVRHM75
INCIDENCE DU FIEVRE HISPANO MAROCAIN EN 1975
NULLES -- -9
LARGEUR: 3

VARIABLE 173 FIEVRHM76
INCIDENCE DU FIEVRE HISPANO MAROCAIN EN 1976
NULLES -- -99
LARGEUR: 3

VARIABLE 174 FIEVRHM77
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1977
NULLES -- -99
LARGEUR: 3

VARIABLE 175 FIEVRHM78
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1978
NULLES -- -99
LARGEUR: 3

VARIABLE 176 FIEVRHM79
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1
NULLES -- -99
LARGEUR: 3

VARIABLE 177 FIEVRHM80
INCIDENCE DU FIEVRE RECURENTE HISPANO MAROCAIN EN 1
NULLES -- -99
LARGEUR: 3

VARIABLE 178 ROUGEOL68
INCIDENCE DU ROUGEOLE EN 1968
NULLES -- -99
LARGEUR: 6

VARIABLE 179 ROUGEOL69
INCIDENCE DE LA ROUGEOLE EN 1969
NULLES -- -99
LARGEUR: 5

VARIABLE 180 ROUGEOLE70
INCIDENCE DE LA ROUGEOLE EN 1970
NULLES -- -99
LARGEUR: 5

VARIABLE 181 ROUGEOLE71
INCIDENCE DE LA ROUGEOLE EN 1971
NULLES -- -99
LARGEUR: 5

VARIABLE 182 ROUGEOLE72
INCIDENCE DE LA ROUGEOLE EN 1972
NULLES -- -99
LARGEUR: 6

VARIABLE 183 ROUGEOLE73
INCIDENCE DE LA ROUGEOLE EN 1973
NULLES -- -99
LARGEUR: 6

VARIABLE 184 ROUGEOLE74
INCIDENCE DE LA ROUGEOLE EN 1974
NULLES -- -99
LARGEUR: 6

VARIABLE 185 ROUGEOLE75
INCIDENCE DE LA ROUGEOLE EN 1975
NULLES -- -99
LARGEUR: 6

VARIABLE 186 ROUGELE76
INCIDENCE DE LA ROUGEOLE EN 1976
NULLES -- -99
LARGEUR: 5

VARIABLE 187 ROUGEOLE77
INCIDENCE DE LA ROUGEOLE EN 1977
NULLES -- -99
LARGEUR: 6

VARIABLE 188 ROUGEOLE78
INCIDENCE DE LA ROUGEOLE EN 1978
NULLES -- -99
LARGEUR: 6

VARIABLE 189 ROUGEOLE79
INCIDENCE DE LA ROUGEOLE EN 1979
NULLES -- -99
LARGEUR: 6

VARIABLE 190 ROUGEOLE80
INCIDENCE DE LA ROUGEOLE EN 1980
NULLES -- -99
LARGEUR: 6

VARIABLE 191 POPURB69
POPULATION URBAINE 1969 -MAROCAINS MUSULANS (AN STAT 70)
NULLES -- -99
LARGEUR: 7

VARIABLE 192 POPRUR69
POPULATION RURALE 1969 MAROCAINS MUSUMANS (AN STAT 70)
NULLES -- -99
LARGEUR: 8

VARIABLE 193 POPTOT69
POPULATION TOTALE 1969 MAROCAINS MUSULMANS (AN STAT 70)
NULLES -- -99
LARGEUR: 8

VARIABLE 194 POPURB70
POPULATION URBAINE 1970 MAROCAINS MUSULMANS (AN STAT 70)
NULLES -- -99
LARGEUR: 7

VARIABLE 195 POPRUR70
POPULATION RURALE 1970 MUSULMANS MAROCAINS (AN STAT 70)
NULLES -- -99
LARGEUR: 8

VARIABLE 196 POPTOT70
POPULATION TOTAL 1970 MAROCAINS MUSULMANS (AN STAT 70)
NULLES -- -99
LARGEUR: 8

VARIABLE 197 POPURB71
POPULATION URBAIN 71 MAROCAIN MUSULMAN (MAROC EN CHIF 71)
NULLES -- -99
LARGEUR: 7

VARIABLE 198 POPRUR71
POPULATION RURAL 71 MAROCAIN MUSULMAN (MAROC EN CHIF 71)
NULLES -- -99
LARGEUR: 7

VARIABLE 199 POPTOT71
POPULATION TOTAL 71 MAROCAIN MUSULMAN (MAROC EN CHIF 71)
NULLES -- -99
LARGEUR: 8

VARIABLE 200 TPOPURB71
POP URBAIN 71 MAROCAIN ET ETRANGER (MAROC EN CHIF 71)
NULLES -- -99
LARGEUR: 7

VARIABLE 201 TPOPRUR71
POPULATION RURAL 1971 MAROCAIN ET ETRANGER (M EN CHIF 71)
NULLES -- -99
LARGEUR: 7

VARIABLE 202 TPOPTOT71
POP. TOTAL 1971 MAROCAIN ET ETRANGER (MAROC EN CHIF 71)
NULLES -- -99
LARGEUR: 8

VARIABLE 203 POPURB72
POPULATION URBAIN 1972 MAROCAIN MUSULMAN (M EN CHIF 72)
NULLES -- -99
LARGEUR: 7

VARIABLE 204 POPRUR72
POP RURAL 1972 MAROCAIN MUSULMAN (MAROC EN CHIFFRES 72)
NULLES -- -99
LARGEUR: 7

VARIABLE 205 POPTOT72
POP TOTAL 1972 MAROCAIN MUSULMAN (MAROC EN CHIFFRES 72)
NULLES -- -99
LARGEUR: 8

VARIABLE 206 TPOPURB73
POPULATION URBAIN 1973 (MAROC EN CHIFFRES 1973)
NULLES -- -99
LARGEUR: 7

VARIABLE 207 TPOPRUR73
POPULATION RURAL 1973 (MAROC EN CHIFFRES 73)
NULLES -- -99
LARGEUR: 8

VARIABLE 208 TPOPTOT73
POPULATION TOTLE 1973 (MAROC EN CHIFFRES 73)
NULLES -- -99
LARGEUR: 8

VARIABLE 209 TPOPURB74
POPULATION URBAINE 1974 (MAROC EN CHIFFRES 74)
NULLES -- -99
LARGEUR: 7

VARIABLE 210 TPOPRUR74
POPULATION RURALE 1974 (MAROC EN CHIFFRES 74)
NULLES -- -99
LARGEUR: 8

VARIABLE 211 TPOPTOT74
POPULATION TOTALE 1974 (MAROC EN CHIFFRES 74)
NULLES -- -99
LARGEUR: 8

VARIABLE 212 TPOPURB75
POPULATION URBAINE 1975 (MAROC EN CHIFFRES 75)
NULLES -- -99
LARGEUR: 7

VARIABLE 213 TPOPRUR75
POPULATION RURALE 1975 (MAROC EN CHIFFRES 75)
NULLES -- -99
LARGEUR: 8

VARIABLE 214 TPOPTOT75
POPULATION TOTALE 1975 (MAROC EN CHIFFRES 75)
NULLES -- -99
LARGEUR: 8

VARIABLE 215 TPOPURB76
POPULATION URBAIN 1976 (AN STAT 76)
NULLES -- -99
LARGEUR: 7

VARIABLE 216 TPOPRUR76
POPULATION RURALE 1976 (AN STAT 76)
NULLES -- -99
LARGEUR: 8

VARIABLE 217 TPOPTOT76
POPULATION TOTAL 1976 (AN STAT 76)
NULLES -- -99
LARGEUR: 8

VARIABLE 218 TPOPURB77
POPULATION URBAIN 1977 (AN STAT 77)
NULLES -- -99
LARGEUR: 7

VARIABLE 219 TPOPRUR77
POPULATION RURALE 1977 (AN STAT 77)
NULLES -- -99
LARGEUR: 8

VARIABLE 220 TPOPTOT77
POPULATION TOTAL 1977 (AN STAT 77)
NULLES -- -99
LARGEUR: 8

VARIABLE 221 TPOPURB78
POPULATION URBAIN 1978 (AN STAT 78)
NULLES -- -99
LARGEUR: 7

VARIABLE 222 TPOPRUR78
POPULATION RURAL 1978 (AN STAT 78)
NULLES -- -99
LARGEUR: 8

VARIABLE 223 TPOPTOT78
POPULATION TOTALE 1978 (AN STAT 78)
NULLES -- -99
LARGEUR: 8

VARIABLF 224 TPOPURB79
POPULATION URBAIN 1979 (AN STAT 79)
NULLES -- -99
LARGEUR: 7

VARIABLE 225 TPOPRUR79
POPULATION RURALE 1979 (AN STAT 79)
NULLES -- -99
LARGEUR: 8

VARIABLE 226 TPOPTOT79
POPULATION TOTALE 1979 (AN STAT 79)
NULLES -- -99
LARGEUR: 8

VARIABLE 227 TPOPURB80
POPULATION URBAIN 1980 (MIN. SANTE)
NULLES -- -99
LARGEUR: 8

VARIABLE 228 TPOPRUR80
POPULATION RURALE 1980 (MIN. SANTE)
NULLES -- -99
LARGEUR: 8

VARIABLE 229 TPOPTOT80
POPULATION TOTALE 1980 (MIN. SANTE)
NULLES -- -99
LARGEUR: 8

VARIABLE 230 KM2-69/74
SUPERFICIE EN KM2 1969-74 (AN STAT 70)
NULLES -- -99
LARGEUR: 8

VARIABLE 231 KM2-75/76
SUPERFICIE EN KM2 1975/76 (MAROC EN CHIFFRES 1975)
NULLES -- -99
LARGEUR: 6

VARIABLE 232 KM2 - 77
SUPERFICIE EN KM2 1977 (AN STAT 77)
NULLES -- -99
LARGEUR: 6

VARIABLE 233 BILZ69/80
TOTAL CAS DE BILZARZIOSE 1969-80
NULLES -- -99
LARGEUR: 6

VARIABLE 234 BILHARINTS
INTENSITE BILHARZIOSE 0=PAS 1=UN PEU 2=TROP
NULLES -- -99
LARGEUR: 6

VARIABLE 235 PLUVIOMETR
PLUVIOMETRIE 1975-80 (AID AG SECTOR STUDY 1981)
NULLES -- -99
LARGEUR: 6

VARIABLE 236 PERMIRRIG
PERIMETRES IRRIGUES (AID AG SECTOR STUDY 1981)
NULLES -- -99
LARGEUR: 6

VARIABLE 237 TBILZ69/71
CAS TOTAL DU BILHARZIOSE 1969-71
NULLES -- -99
LARGEUR: 6

VARIABLE 238 TBILZ72/74
CAS TOTAUX DU BILHARZIOSE 1972-1974
NULLES -- -99
LARGEUR: 6

VARIABLE 239 TBILZ75/77
CAS TOTAUX DE BILHARZIOSE 1975-1977
NULLES -- -99
LARGEUR: 6

VARIABLE 240 TBILZ78/80
CAS TOTAUX DE BILRZIOSE 1978-1980
NULLES -- -99
LARGEUR: 6

VARIABLE 241 TPOP69/71
POPULATION TOTALE 1969-71
NULLES -- -99
LARGEUR: 8

VARIABLE 242 TPOP72/74
POPULATION TOTALE 1972-74
NULLES -- -99
LARGEUR: 8

VARIABLE 243 TPOP75/77
POPULATION TOTALE 1975-1977
NULLES -- -99
LARGEUR: 8

VARIABLE 244 TPOP78/80
POPULATION TOTALE 1978-1980
NULLES -- -99
LARGEUR: 8

VARIABLE 245 TXBIL69/71
TAUX D'INCIDENCE DU BILHARZIOSE 1969-71
NULLES -- -99
LARGEUR: 8

VARIABLE 246 TXBIL72-74
TAUX D'INCIDENCE DU BILHARZIOSE 1972-74
NULLES -- -99
LARGEUR: 8

VARIABLE 247 TXBIL75-77
TAUX D'INCIDENCE DU BILHARZIOSE 1975-77
NULLES -- -99
LARGEUR: 8

VARIABLE 248 TXBIL78-80
TAUX D'INCIDENCE DU BILHARZIOSE 1978-80
NULLES -- -99
LARGEUR: 8

VARIABLE 249 #MEDICIN79
DE MEDECINS PRIVES ET PUBLIQUES '79 (AN STAT 79)
NULLES -- 0
LARGEUR: 8

VARIABLE 250

NULLES -- -99
LARGEUR: 8

VARIABLE 251 %RUR69/71
% RURAL 1969-1971
NULLES -- -99
LARGEUR: 5

VARIABLE 252 %RUR72/74
% RURAL 1972-74
NULLES -- -99
LARGEUR: 5

VARIABLE 253 %RUR75/77
% RURAL 1975-1977
NULLES -- -99
LARGEUR: 5

VARIABLE 254 %RUR78/80
% RURAL 1978-1980
NULLES -- -99
LARGEUR: 5

VARIABLE 255 DENS69/71
DENSITE 1969-1971
NULLES -- -99
LARGEUR: 5

VARIABLE 256 DENS72/74
DENSITE 1972-1974
NULLES -- -99
LARGEUR: 5

VARIABLE 257 DENS75-77
DENSITE 1975-1977
NULLES -- -99
LARGEUR: 5

VARIABLE 258 DENS78/80
DENSITE 1978-1980
NULLES -- -99
LARGEUR: 5

VARIABLE 259 KM2-78
SUPERFICIE EN KM2 1978 (AN STAT 78)
NULLES -- -99
LARGEUR: 6

VARIABLE 260 KM2-79
SUPERFICIE EN KM2 1979 (AN STAT 1979)
NULLES -- -99
LARGEUR: 6

VARIABLE 261 SAU
SUPERFICIE AGRICOLE UTILE (AG. SECTOR STUDY 81)
NULLES -- -99
LARGEUR: 4

VARIABLE 262 %SUPAGUTIL
% SUPERFICIE AGRICOLE UTILE (AG. SECTOR STUDY 81)
NULLES -- -99
LARGEUR: 4

VARIABLE 263 DENPOPAGR
DENSITE DE LA POP. AGRICOLE (AG. SECTOR STUDY 81)
NULLES -- -99
LARGEUR: 3

VARIABLE 264 #POPRIRAG
POP RURALE SUR TERRES IRRIGUEES
NULLES -- -99
LARGEUR: 8

VARIABLE 265 INEAV78/80
INVERTISSMENTS EN EAU POTABLE 1978-80 (PLAN DE DEV 1978/80)
NULLES -- -99
LARGEUR: 8

VARIABLE 266 %POPRIRAG
PERCENT POP RURALE SUR TERRES IRRIGUEES
NULLES -- -99
LARGEUR: 5

VARIABLE 267 TXPLD69/71
TAUX D'INCIDENCE DU PALUDISM 1969-71
NULLES -- -99
LARGEUR: 7

VARIABLE 268 TXPLD72/74
TAUX D'INCIDENCE DU PALUDISM 1972-74
NULLES -- -99
LARGEUR: 7

VARIABLE 269 TXPLD75/77
TAUX D'INCIDENCE DU PALUDISM 1975-77
NULLES -- -99
LARGEUR: 7

VARIABLE 270 TXPLD78/80
TAUX D'INCIDENCE DU PALUDISM 1978-80
NULLES -- -99
LARGEUR: 7

VARIABLE 271 TXDYS69/70
TAUX DE DYSENTERIE 1969-70 (AUCUN CAS 1971)
NULLES -- -99
LARGEUR: 7

VARIABLE 272 TXDYS72/74
TAUX DE DYSENTERIE 1972-74
NULLES -- -99
LARGEUR: 7

VARIABLE 273 TXDYS76/77
TAUX DE DYSENTERIE 1976-77 (AUCUN CAS 1975)
NULLES -- -99
LARGEUR: 7

VARIABLE 274 TXDYS78/80
TAUX DE DYSENTERIE 1978-80
NULLES -- -99
LARGEUR: 7

VARIABLE 275 TXTYPH69/71
TAUX DE TYPHOISE 1969-71
NULLES -- -99
LARGEUR: 7

VARIABLE 276 TXTYPH72/74
TAUX DE TYPHOIDE 1972-74
NULLES -- -99
LARGEUR: 7

VARIABLE 277 TXTYP75/77
TAUX DE TYPHOISDE 1975-77
NULLES -- -99
LARGEUR: 7

VARIABLE 278 TXTYP78/80
TAUX DE TYPHOIDE 1978-80
NULLES -- -99
LARGEUR: 7

VARIABLE 279 #MEDECIN70
DE MEDECINS 1970-71 PUBLIQUES ET PRIVES (AN STAT 70)
NULLES -- 0
LARGEUR: 7

VARIABLE 280 #MEDECIN76
DE MEDECINS 1976 PUBLIQUES ET PRIVES (AN STAT 76)
NULLES -- 0
LARGEUR: 7

VARIABLE 281 ANALPURB
TAUX D'ANALPHABETISM URBAIN 1971 AGEE 10+(AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 282 ANALPRURAL
TAUX D'ANALPHABETISM RURAL 1971 AGEE 10+ (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 283 ANALPMASC
TAUX D'ANALPHABETISM MASCULIN 1971 AGEE 10+ (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 284 ANALPHFEM
TAUX D'ANALPHABETISM FEMININ 1971 AGEE 10+ (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 285 ANALPHAB
TAUX D'ANALPHABETISM TOTAL 1971 AGEE 10+ (AN STAT 1979)
NULLES -- 0
LARGEUR: 4

VARIABLE 286 TXSCHOLURB
TAUX DE SCHOLARISATION URBAIN 1971 AGEE 7-15 ANS (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 287 TXSCHOLRUR
TAUX DE SCHOLARISATION RURAL 1971 AGEE 7-15 ANS (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 288 TXSCHOLMASC
TAUX DE SCHOLARISATION MASC 1971 AGEE 7-15 ANS (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 289 TXSCHOLFEM
TAUX DE SCHOLARISATION FEMININ '71 AGEE 7-15 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 290 TXSCHOLAR
TAUX DE SCHOLARISATION TOTAL '71 AGEE 7-15 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 291 %MACONNERIE
% MGES URBAINS DE MACONNERIE 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 292 %PIERRESCHE
% MGES URBAINS DE PIERRE SECHE 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 293 %MGESPISE
% DE MENAGES PISES 1971 (AN STAT 71)
NULLES -- 0
LARGEUR: 4

VARIABLE 294 %BARAQUES
% DE MENAGES EN BARAQUES 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 295 %CUISINE
% DE MENAGES AVEC CUISINE 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 296 % W.C.
% DE MENAGES AVEC W.C. 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 297 %S.BAIN
% DE MENAGES AVEC SALLE DE BAIN 1971 (AN STAT
NULLES -- 0
LARGEUR: 4

VARIABLE 298 EAU COUR
% DE MENAGES AVEC EAU COURANTE 1971 (AN STAT 79
NULLES -- 0
LARGEUR: 4

VARIABLE 299 %ELECT
% DE MENAGES AVEC ELECTRICITE 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4

VARIABLE 300 %1A2PIECE
% DE MGES OCCUPANT 1 A 2 PIECES 1971 (AN STAT 79)
NULLES -- 0
LARGEUR: 4