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# EPIDEMIOLOGICAL ASPECTS OF LEPROSY IN BRAZIL

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Brazil, a federal republic occupying 47% of the South American continent, has an area of 8,511,965 square kilometers. Most of its territory lies between the Equator and the Tropic of Capricorn. Brazil's territorial limits are the parallels 5°16′19″ North and 33°45′09″ South and the meridians 34°45′54″ and 73°59′32″ West of Greenwich.

This situation produces the great variety of geographical features and climates observed in this beautiful country.

Brazil is divided into 27 political subdivisions:

— AC (Acre), AM (Amazonas), RR (Roraima), PA (Pará), AP (Amapá), MA (Maranhão), PI (Piauí), CE (Ceará), RN (Rio Grande do Norte), PB (Paraíba), PE (Pernambuco), FN (Fernando de Noronha), AL (Alagoas), SE (Sergipe), BA (Bahïa), MG (Minas Gerais), ES (Espírito Santo), RJ (Rio de Janeiro), SP (São Paulo), PR (Paraná), SC (Santa Catarina), RS (Rio Grande do Sul), RO (Rondônia), MT (Mato Grosso), MS (Mato Grosso do Sul), GO (Goiás), DF (Distrito Federal). For many purposes the territory of Fernando de Noronha is considered in the State of Pernambuco.

Leprosy was introduced into Brazil after its discovery by the Portuguese and disseminated by the African slaves. The first cases, following the colonization pathways, appeared along the Atlantic coast from Rio de Janeiro to Pernambuco.

According to Fernando Terra, quoted by Agricola & Risi (2) the first cases were reported around the year 1600 and by the end of that century the extension of the disease already required prophylactic measures.

Neverthless until 1921 almost nothing had been done against the disease (3). In that year the first surveys were undertaken, notwithstanding the great difficulties due to the extensive territory and scarce technical and financial resources.

In 1924, the total cases registered were 7,224 with two principal foci recognised, one in the northern states of Pará and Maranhão and one in the southern states of São Paulo and Minas Gerais.

One year later the registered cases numbered 9,003, and in 1936 the prevalence of leprosy for the country was 0.7 per thousand inhabitants, with 31,920 registered cases.

In 1937 there were 35,308 known patients (1). From these 11,902 were segregated in specialized institutions (33.71%).

From 1938 onwards a more detailed study was undertaken in this sense, culminating in 1941 in the foundation of the National Leprosy Service and the undertaking of more accurate epidemiological surveys.

According to Agricola and Risi (2), in the early stages of the sulphone era, in 1946, the epidemiological situation of leprosy in Brazil is shown in table I and figure 1.

In their work the authors came to the following conclusions:

a — There was compared with the composition of the general population.

- a. 1 — Higher prevalence of the disease in males than in females;
- a. 2 — Higher prevalence in foreigners than in the natives;
- a. 3 — Equal distribution of the disease according to the skin colour (White, black, brown and yellow);
- a. 4 — High frequency of the disease in the population aged less than 15 years in the northern region, in comparison with the other regions, reaching almost twice that of the southern region.

b — The stage of socio-cultural and economic development differed from place to place;

c — The internal migrations influenced the expansion of the endemicity;

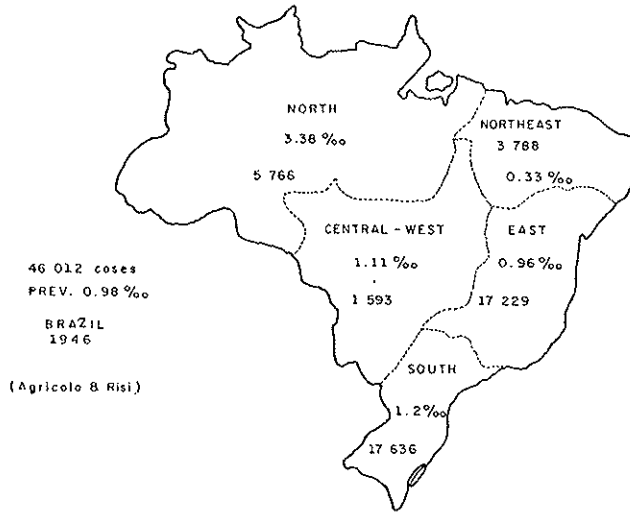
d — The proportion of the composition of the rural and urban population influenced the prevalence of the disease.

TABLE I — *Leprosy Frequency in the Federal Units and Rates per Thousand Inhabitants.* — Brazil 1946.

| NATURAL REGIONS AND F. U. | REGISTERED CASES | RATE |
|---|---|---|
| NORTH | 5 766 | 3.38 |
| RO | 42 | 1.72 |
| AC | 277 | 3.00 |
| RR | 16 | 1.14 |
| AP | 43 | 1.65 |
| AM | 1 816 | 3.71 |
| PA | 3 572 | 3.37 |
| NORTHEAST | 3 788 | 0.33 |
| MA | 1 214 | 0.86 |
| PI | 260 | 0.28 |
| CE | 1 282 | 0.54 |
| RN | 243 | 0.28 |
| PB | 199 | 0.12 |
| PE | 498 | 0.16 |
| AL | 92 | 0.08 |
| EAST | 17 229 | 0.96 |
| SE | 117 | 0.19 |
| BA | 157 | 0.04 |
| MG | 11 546 | 1.50 |
| ES | 1 253 | 1.45 |
| RJ | 1 283 | 0.61 |
| FD | 2 873 | 1.42 |
| SOUTH | 17 636 | 1.19 |
| SP | 14 135 | 1.72 |
| PR | 1 750 | 1.23 |
| SC | 678 | 0.51 |
| RS | 1 073 | 0.28 |
| C. WEST | 1 593 | 1.1 |
| MT | 533 | 1.11 |
| GO | 1 060 | 1.12 |

BRAZIL – 1946

LEPROSY NATURAL REGIONS: PREVALENCE RATE PER 1,000 INHABITANTS



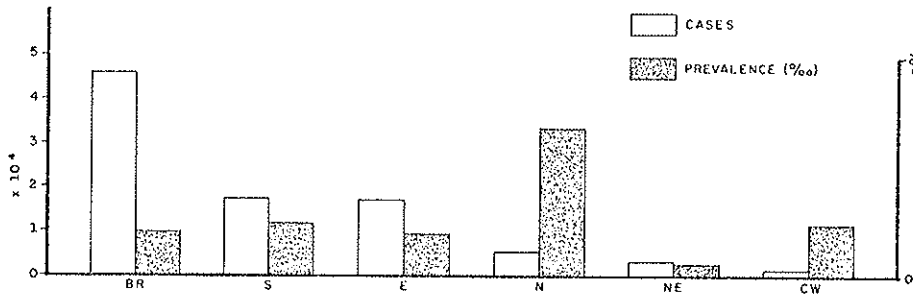




FIG. 1

In truth, these data do not represent the reality of the problem, as can be illustrated by the example of what happened in the district of Candeias, state of Minas Gerais, where an intensive survey took place conducted by del Favero (4).

Before the extensive survey, this district presented a prevalence rate of 0.45 patients per thousand inhabitants and 0.008 patient per $km^2$. These numbers increased to 3.52/1000 and 0.071, respectively, as the result of an extensive survey conducted there, and up to 9.64 patients per thousand inhabitants and 0.187 patients per $km^2$ after the intensive survey took place. This shows the necessity of conducting good surveys for a correct appraisal of epidemiological conditions.

Table II and figure 2 show Agricola & Risi's data adjusted to Brazil's now current territory division adopted for Public Health purposes in five "Coordenadorias de Saúde".

As in other regions of the world, the distribution of the disease follows a patchy pattern.

The Amazon Region, with huge forests, hot and super-humid climate and the heaviest rainfalls, showed the highest prevalence rate: 2.24/1,000. In contrast, the northeastern region, with a hotter climate, record of recurring droughts, scrubby thorn woodland (*catinga*) and a moisture deficiency, showed the lowest prevalence rate: 0.19/1,000. This region is also an old focus of leprosy.

Great diversity between prevalence rates is observed also among the several federal units, varying from 3.71/1,000 in the Amazon state to 0.04/1,000 in Bahia.

Factors that could contribute to this diversity are:

a — Climate acting upon the physiology and life habits of the host, and on the viability of the pathogen through different humidity, temperature and solar light levels;

b — Stage of socio-cultural and economic development, differing from place to place;

c — Migrations influencing the expansion of the endemicity;

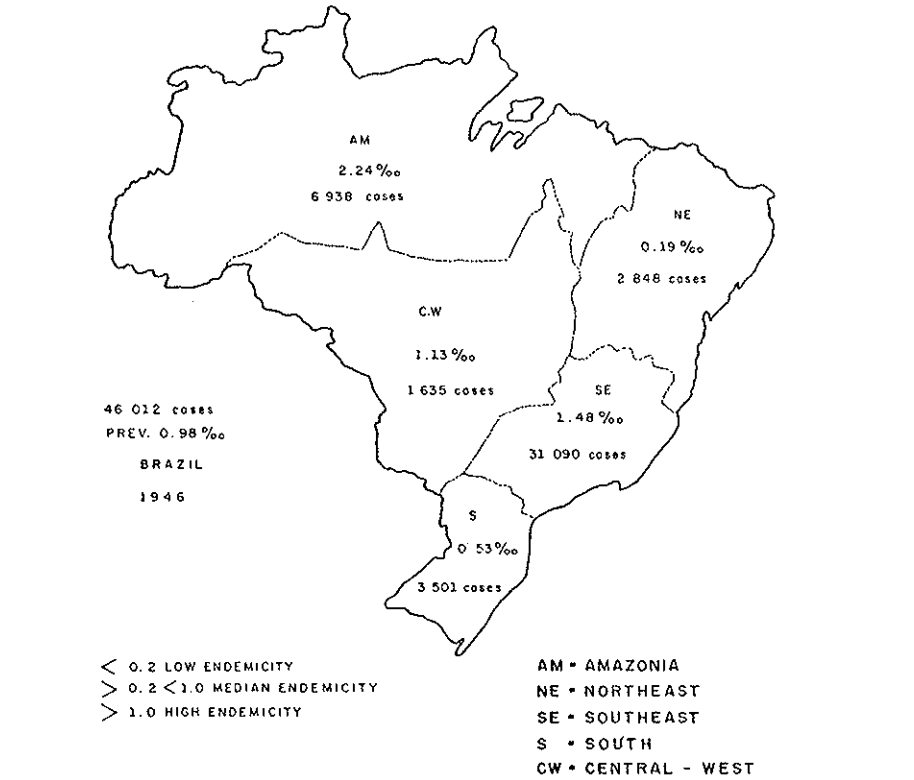
d — Variations in proportions of the rural and urban populations.

The more recent data available regarding the situation of the leprotic endemicity in Brazil refer to December 31, 1982, and were reported by Prof. Aguinaldo Gonçalves, Director of the National Division of Sanitary Dermatology, Ministry of Health (5).

TABLE II — *Leprosy Frequency and Prevalence Rate per Thousand Inhabitants.* – Brazil 1946.

| | TOTAL | RATE |
|---|---|---|
| BRAZIL | 46 012 | 0.98 |
| AMAZONIA | 6 938 | 2.24 |
| AC | 277 | 3.00 |
| RR | 16 | 1.14 |
| AP | 43 | 1.65 |
| AM | 1 816 | 3.71 |
| PA | 3 572 | 3.37 |
| MA | 1 214 | 8.86 |
| NORTHEAST | 2 848 | 0.19 |
| PI | 260 | 0.28 |
| CE | 1 282 | 0.54 |
| RN | 243 | 0.28 |
| PB | 199 | 0.12 |
| PE | 498 | 0.16 |
| AL | 92 | 0.08 |
| SE | 117 | 0.19 |
| BA | 157 | 0.04 |
| SOUTHEAST | 31 090 | 1.48 |
| MG | 11 546 | 1.50 |
| ES | 1 253 | 1.45 |
| RJ | 1 283 | 0.61 |
| DF | 2 873 | 1.42 |
| SP | 14 135 | 1.72 |
| SOUTH | 3 501 | 0.53 |
| PR | 1 750 | 1.23 |
| SC | 678 | 0.56 |
| RS | 1 073 | 0.28 |
| WEST-CENTRAL | 1 635 | 1.13 |
| RO | 42 | 1.72 |
| MT | 533 | 1.11 |
| GO | 1 060 | 1.12 |

LEPROSY MORBIDITY – SANITARY REGIONS BRAZIL – 1946



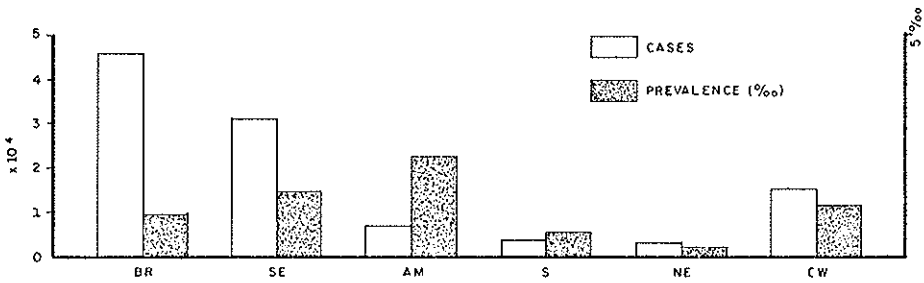




FIG. 2

In that year the total number of registered cases was 198,700, corresponding to a prevalence rate of 1.57 per thousand inhabitants. These values place the country, according to WHO criteria, in the range of high endemicity.

Gonçalves (5), quoting Motta, states that the Brazilian cases represent 80% of all the registered cases in the Americas.

Still according to WHO criteria (6), due to sub-registration caused by different factors these numbers are not representative of the actual situation, and must be multiplied by 1.75. So doing, the number of cases quoted here increases to a total of 347,725 and the prevalence rate to 2.74/1,000 inhabitants.

Table III shows the prevalence and incidence rates, number of registered cases, patients under control and new cases detected during the year, according to the "Coordenadorias Regionais de Saúde" and federal administrative units (Fig. 3 and 4).

Hanseniasis for leprosy and Virchowian (V) for lepromatous are here employed in accordance with the official nomenclature adopted by Brazil's Ministry of Health.

All the regions constitute high endemicity areas, with one exception: the Northeast region, considered an area of median endemicity. Of the federal units, 16 (AC, AM, RR, PA, AP, MA, MG, ES, RJ, SP, PR, RO, MT, MS, GO and DF) are high grade areas of endemicity with prevalence rates varying from 10.84 in Acre to 1.06 in the Federal capital. Eight (PI, CE, PB, PE, SE, BA, SC, RS) are areas of median endemicity, with prevalence rates varying from 0.97 in Piauí to 0.24 in Paraíba, and two (RR and AL) are low endemicity areas, presenting prevalence rates of 0.13 in Rio Grande do Norte and 0.11 in Alagoas (F. U. stands for federal unit).

Analysing the prevalence and incidence rates, the sanitary regions can be placed in the following decreasing order: Amazonia, Central West, Southeast, South and Northeast, varying from 3.95/1,000 and 35.29 per 100,000 inhabitants to 0.47/1,000 and 5.52/100,000, respectively.

In this case, there was a correspondence between both rates, which was not observed in the federal units, the state of Acre presenting the highest prevalence rate in the country: 10.84/1,000, and the state of Amazon the highest incidence rate: 99.74/100,000 inhabitants, while Alagoas figures with the lowest prevalence rate: 0.11/1,000, and Rio Grande do Norte the lowest incidence rate reported for the country: 1.14/100,000 inhabitants. Now if we refer to

TABLE III — *Hanseniasis - Morbidity and Patient Control by Region and Federal Unit.* – Brazil 31/12/1982.

| REGIONS AND F | REGISTERED CASES | | | | | UNDER CONTROL | | | | | | NEW CASES REGISTERED 1982 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RATE per [illegible] INHAB. | TOTAL | CLINICAL FORMS | | | TOTAL | OUT-PATIENTS | | | | HOSPITALIZED | | |
| | | | V + D | I | T | | TOTAL | V + D | I | T | | Nº | RATE P/ 100 000 INHAB. |
| BRAZIL | 1.57 | 198 700 | 105 404 | 47 122 | 46 174 | 123 109 | 114 147 | 58 949 | 26 286 | 28 912 | 8 964 | 16 994 | 13.40 |
| *AMAZÔNIA* | 3.95 | 40 553 | 18 492 | 10 278 | 11 783 | 27 314 | 26 215 | 11 558 | 6 224 | 8 433 | 1 101 | 3 632 | 35.29 |
| AC | 10.84 | 3 556 | 1 315 | 1 369 | 872 | 1 417 | 1 280 | 348 | 636 | 296 | 137 | 193 | 58.84 |
| AM | 10.43 | 16 374 | 7 301 | 3 934 | 5 139 | 10 605 | 10 495 | 4 491 | 2 056 | 3 948 | 110 | 1 565 | 99.74 |
| RR | 1.45 | 132 | 51 | 18 | 63 | 115 | 115 | 49 | 12 | 54 | 2 | 25 | 27.47 |
| PA | 2.91 | 11 002 | 4 991 | 2 660 | 3 351 | 9 994 | 9 191 | 3 955 | 2 373 | 2 863 | 753 | 916 | 24.23 |
| AP | 4.38 | 850 | 459 | 225 | 166 | 459 | 459 | 284 | 104 | 71 | — | 118 | 60.82 |
| MA | 2.01 | 8 639 | 4 375 | 2 072 | 2 192 | 4 774 | 4 675 | 2 431 | 1 043 | 1 201 | 99 | 815 | 18.95 |
| NORTHEAST | 0.47 | 15 315 | 7 410 | 3 543 | 4 362 | 10 800 | 10 064 | 4 979 | 2 060 | 3 025 | 736 | 1 798 | 5.52 |
| PI | 0.97 | 2 201 | 1 024 | 566 | 611 | 1 024 | 956 | 511 | 211 | 234 | 68 | 251 | 11.03 |
| CE | 0.72 | 4 033 | 2 399 | 809 | 825 | 2 692 | 2 403 | 1 396 | 403 | 604 | 289 | 438 | 7.85 |
| RN | 0.13 | 260 | 170 | 31 | 59 | 207 | 137 | 81 | 17 | 39 | 70 | 23 | 1.14 |
| PB | 0.24 | 684 | 306 | 215 | 163 | 650 | 609 | 266 | 199 | 144 | 41 | 78 | 2.70 |
| PE | 0.58 | 3 733 | 1 461 | 842 | 1 430 | 2 891 | 2 750 | 1 117 | 575 | 1 058 | 141 | 486 | 7.54 |
| AL | 0.11 | 233 | 109 | 51 | 73 | 131 | 131 | 63 | 29 | 39 | ..... | 31 | 1.47 |
| SE | 0.69 | 830 | 312 | 213 | 305 | 515 | 491 | 183 | 124 | 184 | 24 | 85 | 7.04 |
| BA | 0.33 | 3 341 | 1 629 | 816 | 896 | 2 690 | 2 587 | 1 362 | 502 | 723 | 103 | 406 | 4.03 |
| SOUTHEAST | 1.75 | 96 630 | 53 957 | 22 377 | 20 296 | 50 668 | 44 886 | 23 663 | 10 296 | 10 927 | 5 782 | 7 023 | 12.70 |
| MG | 2.47 | 34 469 | 18 510 | 8 311 | 7 648 | 6 536 | 4 538 | 1 556 | 753 | 2 229 | 1 998 | 1 991 | 10.77 |
| ES | 3.29 | 7 072 | 2 937 | 2 792 | 1 343 | 5 465 | 5 178 | 2 226 | 1 980 | 972 | 287 | 560 | 26.11 |
| RJ | 1.38 | 16 616 | 8 500 | 3 310 | 4 806 | 12 691 | 11 258 | 5 566 | 2 333 | 3 359 | 1 433 | 1 577 | 13.15 |
| SP | 1.41 | 38 473 | 24 010 | 7 964 | 6 499 | 25 976 | 23 912 | 14 315 | 5 230 | 4 367 | 2 064 | 2 895 | 10.64 |
| SOUTH | 1.37 | 27 095 | 15 136 | 6 679 | 5 280 | 23 197 | 22 525 | 13 025 | 5 498 | 4 002 | 672 | 2 053 | 10.37 |
| PR | 2.72 | 21 344 | 11 009 | 6 008 | 4 327 | 18 778 | 18 418 | 10 005 | 5 040 | 3 373 | 360 | 1 663 | 21.22 |
| SC | 0.59 | 2 290 | 1 476 | 371 | 443 | 1 564 | 1 439 | 947 | 242 | 250 | 125 | 152 | 3.95 |
| RS | 0.42 | 3 461 | 2 651 | 300 | 510 | 2 855 | 2 668 | 2 073 | 216 | 379 | 187 | 238 | 2.93 |
| CENTRAL-WEST | 2.15 | 19 107 | 10 409 | 4 245 | 4 453 | 11 130 | 10 457 | 5 724 | 2 208 | 2 525 | 673 | 2 488 | 28.00 |
| RO | 2.66 | 1 604 | 765 | 256 | 583 | 1 227 | 1 146 | 547 | 182 | 417 | 81 | 132 | 21.89 |
| MT | 2.35 | 3 060 | 1 568 | 752 | 740 | 2 804 | 2 680 | 1 327 | 692 | 661 | 124 | 635 | 48.88 |
| MS | 1.70 | 2 517 | 1 585 | 313 | 619 | 276 | 210 | 210 | — | — | 66 | 340 | 23.00 |
| GO | 2.53 | 10 478 | 5 726 | 2 651 | 2 101 | 5 542 | 5 140 | 2 951 | 1 098 | 1 091 | 402 | 1 093 | 26.39 |
| DF | 1.06 | 1 448 | 765 | 273 | 410 | 1 281 | 1 281 | 689 | 236 | 356 | — | 288 | 21.11 |

HANSENIASIS–PREVALENCE

ABSOLUTE NUMBERS AND RATE PER 1,000 INHABITANTS ACCORDING TO REGIONS – BRAZIL – 1982

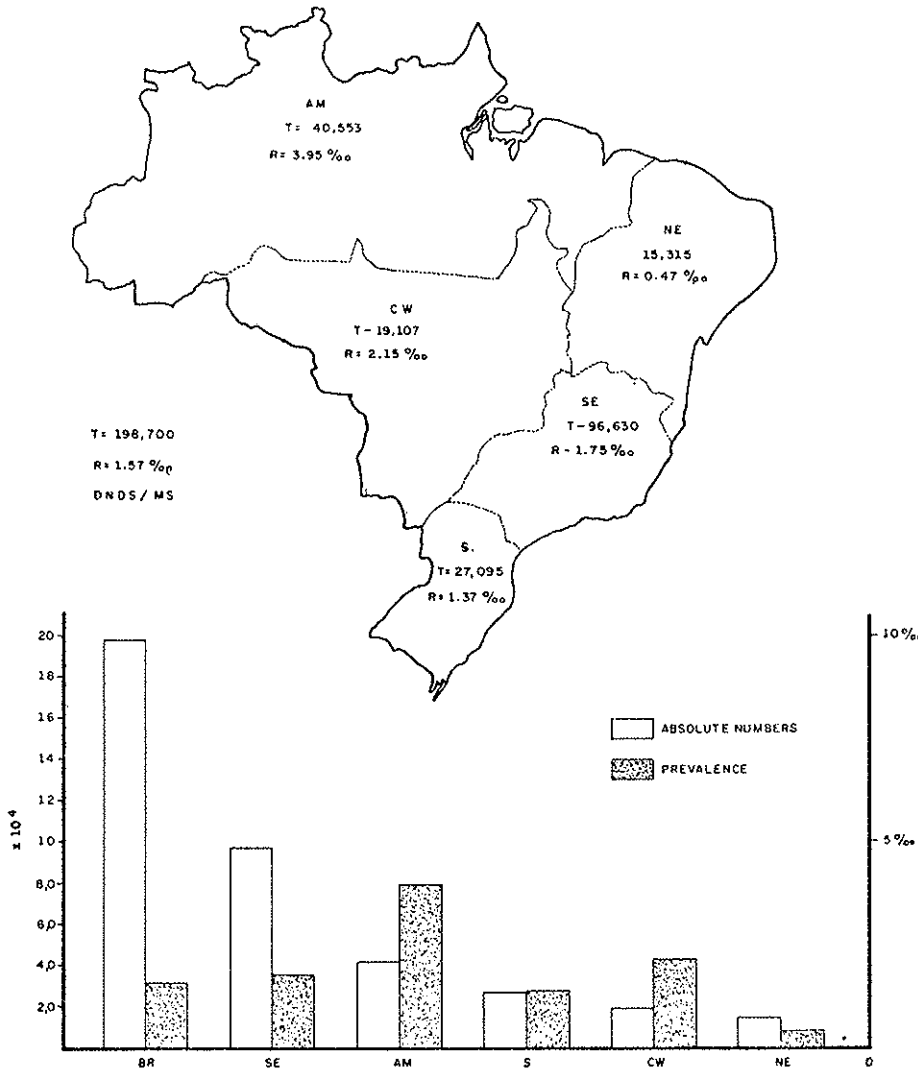



FIG. 3

HANSENIASIS–PREVALENCE

PERCENTAGE OF REGISTERED CASES AND OF V + D FORMS ACCORDING TO REGIONS – BRAZIL – 1982

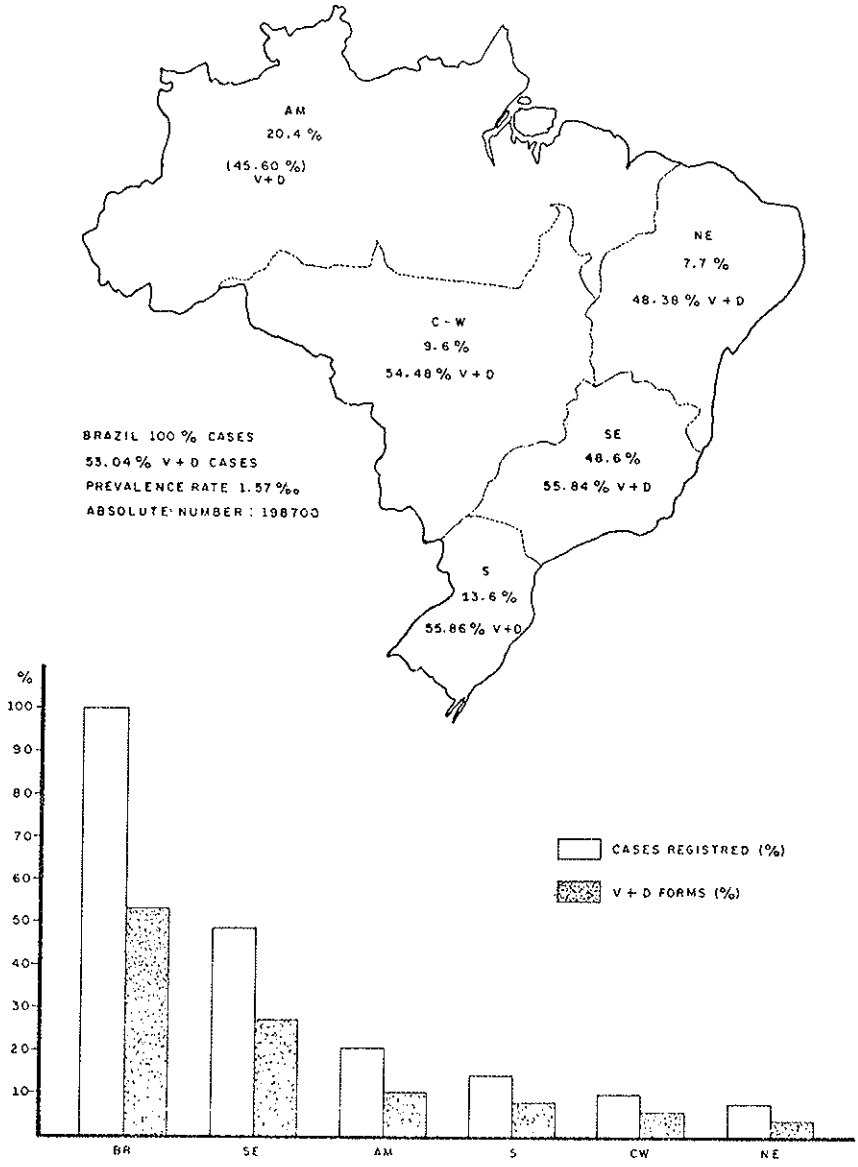



FIG. 4

the absolute numbers of cases recorded, the regions according to the decreasing order will be placed as follows:

First, the Southeastern region with the highest numbers: 96,630 registered cases or 48.6% of the sick population of the country and 7,023 new cases or 41.4% of all new cases detected in Brazil in 1982. This region, Brazil's most developed and industrialized one, comprises 10.86% of the area of the country and 43.6% of the general population, presenting the highest demographic density: 59.78 inhabitants per square kilometer.

Next comes the Amazonia region presenting 40,553 known cases, less than half the Southeast region's cases or 20.4% of the sick population, and 3,632 new cases or 21.4% of all new cases detected during the year. This region comprises 43.07% of the nation's area and 8.1% of its population with 2.80 inhabitants per square kilometer.

In the third place stands the Southern region, with 27,095 registered cases or 13.6% of the country's reported cases and 2,053 new cases detected or 12.0% of all new cases reported. Next to the Southeastern region in socio-cultural and economic development, the Southern region comprises 6.79% of the nation's area and holds 15.6% of its population and supports 34.27 inhabitants per $km^2$.

The Central region comes next with 19,107 registered cases (9.6%) and 2,488 (14.6%) new cases detected, and contains 24.94% of the nation's area, 7.0% of its population and 4.18 inhabitants per $km^2$.

The last position is assigned to the Northeastern region with 15,315 registered cases or 7.7% of all known cases, and 1,798 new cases reported, equalling 10.6% of all new cases detected in the period. This region's area equals 14.38% of the nation's area, participates with 25.7% of the general population and contains 26.69 inhabitants per $km^2$ (See table XVIII and XIX).

Outstanding is the great difference existing between fractions of the sick and general population in these regions, particularly in the Amazon region, where the fraction of the sick population is 20.4% and that of the general population is only 8.1%, and in the Southeastern region where the sick population's fraction is 48.6% and the general population's is 43.6%.

In table III are displayed the clinical forms and their distribution in absolute numbers. In table IV-V which shows the percent coefficient of the same, the sharp predominance can be noted of the "Polar" forms all over the country: 78.28%. Although not a "Polar" form, the

Dimorphous form had to be included in this group due to the Brazilian system of epidemiological records that register the infectious forms together (See table V).

Such high percentages of "Polar" forms as 91.33 (RS), 88.08 (RN), 87.56 (MS), 86.37 (RR), 84.04 (RO), 83.94 (CE), 83.79 (SC), 81.14 (DF), 80.07 (RJ) and 79.29 (SP) were registered in the federal units.

The V + D group predominated in all the federal units with one exception: Roraima, but with very few cases registered.

The V + D rate varied from 76.60% in Rio Grande do Sul to 36.98% in Acre, the Southeastern, Southern and Central-Western regions presenting the highest coefficients in general. The Amazonia and Northeastern regions presenting lower rates of V + D and higher rates of T forms.

In table VI case control rates for Brazil in general are 61.96% for all forms and 62.62% for V + D forms. These numbers are below the 75% rate recommended by WHO.

The Southern region is unique in presenting a good control of cases: 85.61% of all cases and 89.79% of V + D cases.

The Northeastern region, although not reaching the recommended percentage for all cases, presents a good control of the V + D cases: 74.98%.

The Southeastern region, despite being the best developed region, shows the lowest rate of case control of all forms, with the aggravating circumstance that it shelters the largest contingent of the sick population.

Only 13 of the federal units presented a case control rate above 75% for all forms.

Table VII shows the distribution, in absolute numbers and in percentage, of the patients under control, considering the clinical forms, regions and federal units.

Considering that *greater attention* should be paid to the control of infectious cases, it is salient to point out that the case control rate of T form in Brazil, in the Amazonia and in the Southeastern region is higher than that of the V + D forms. The same happened in five of the federal units, perhaps because the T cases, being less numerous and subjected to fewer periodical revisions, are easier to control.

The good performance of case control achieved by the states of Pará, Mato Grosso and Paraíba reaching very high rates of control in all forms of Hanseniasis is noteworthy.

TABLE IV — *Hanseniasis* – Registered Cases 1982.

| REGIONS AND F. U. | RATE P/1 000 | TOTAL | CLINICAL FORMS | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | V + D | | I | | T | |
| | | | TOTAL | % | TOTAL | % | TOTAL | % |
| BRAZIL | 1.57 | 198 700 | 105 404 | 53.04 | 47 122 | 23.71 | 16 174 | 23.24 |
| AMAZONIA | 3.95 | 40 553 | 18 492 | 45.60 | 10 278 | 25.34 | 11 783 | 29.05 |
| AC | 10.84 | 3 556 | 1 315 | 36.98 | 1 369 | 38.50 | 872 | 24.52 |
| AM | 10.43 | 16 374 | 7 301 | 44.59 | 3 934 | 24.02 | 5 139 | 31.38 |
| RR | 1.45 | 132 | 51 | 38.64 | 18 | 13.64 | 63 | 47.73 |
| PA | 2.91 | 11 002 | 4 991 | 45.36 | 2 660 | 24.18 | 3 351 | 30.46 |
| AP | 4.38 | 850 | 459 | 54.00 | 225 | 26.47 | 166 | 19.53 |
| MA | 2.01 | 8 639 | 4 375 | 50.64 | 2 072 | 23.98 | 2 192 | 25.37 |
| NORTHEAST | 0.47 | 15 315 | 7 410 | 48.38 | 3 543 | 23.13 | 4 362 | 28.48 |
| PI | 0.97 | 2 201 | 1 024 | 46.52 | 566 | 25.71 | 611 | 27.76 |
| CE | 0.72 | 4 033 | 2 399 | 59.48 | 809 | 20.06 | 825 | 24.46 |
| RN | 0.13 | 260 | 170 | 65.38 | 31 | 11.92 | 59 | 22.70 |
| PB | 0.24 | 684 | 306 | 44.74 | 215 | 31.43 | 163 | 23.83 |
| PE | 0.58 | 3 733 | 1 461 | 39.14 | 842 | 22.55 | 1 430 | 38.31 |
| AL | 0.11 | 233 | 109 | 46.78 | 51 | 21.89 | 73 | 31.33 |
| SE | 0.69 | 830 | 312 | 37.59 | 213 | 25.66 | 305 | 36.75 |
| BA | 0.33 | 3 341 | 1 629 | 48.76 | 816 | 24.42 | 896 | 26.82 |
| SOUTHEAST | 1.75 | 96 630 | 53 957 | 55.84 | 22 377 | 23.16 | 20 296 | 21.00 |
| MG | 2.47 | 34 469 | 18 510 | 53.70 | 8 311 | 24.11 | 7 648 | 22.19 |
| ES | 3.29 | 7 072 | 2 937 | 41.53 | 2 792 | 39.48 | 1 343 | 18.99 |
| RJ | 1.38 | 16 616 | 8 500 | 51.15 | 3 310 | 19.92 | 4 806 | 28.92 |
| SP | 1.41 | 38 473 | 24 010 | 62.40 | 7 964 | 20.70 | 6 499 | 16.89 |
| SOUTH | 1.37 | 27 095 | 15 136 | 55.86 | 6 679 | 24.65 | 5 280 | 19.49 |
| PR | 2.72 | 21 344 | 11 009 | 51.58 | 6 008 | 28.15 | 4 327 | 20.27 |
| SC | 0.59 | 2 290 | 1 476 | 64.45 | 371 | 16.20 | 443 | 19.34 |
| RS | 0.42 | 3 461 | 2 651 | 76.60 | 300 | 8.67 | 510 | 14.73 |
| CENTRAL-WEST | 2.15 | 19 107 | 10 409 | 54.48 | 4 245 | 22.22 | 4 453 | 23.30 |
| RO | 2.66 | 1 604 | 765 | 47.69 | 256 | 15.96 | 583 | 36.35 |
| MT | 2.35 | 3 060 | 1 568 | 51.24 | 752 | 24.57 | 740 | 24.18 |
| MS | 1.70 | 2 517 | 1 585 | 62.97 | 313 | 12.43 | 619 | 24.59 |
| GO | 2.53 | 10 478 | 5 726 | 54.65 | 2 651 | 25.30 | 2 101 | 20.05 |
| DF | 1.06 | 1 448 | 765 | 52.83 | 273 | 18.85 | 410 | 28.31 |

Good performances in this aspect, if not with as high coefficients, have been achieved also by the states of Paraná, Pernambuco and Rondônia.

The importance of all forms in case control should be stressed: the V + D due to their infectiousness, the T due to the incapacities engendered and the I as source of infectious and T forms.

TABLE V — *Hanseniasis Prevalence.* – Brazil 1982.

| REGIONS AND F. U. | RATE P/1 000 | CLINICAL FORMS | | | |
|---|---|---|---|---|---|
| | | P* % | V + D % | I % | T % |
| BRAZIL | 1.57 | 78.28 | 53.04 | 23.71 | 23.24 |
| AMAZONIA | 3.95 | 74.65 | 45.60 | 25.34 | 29.05 |
| AC | 10.84 | 61.50 | 36.98 | 38.50 | 24.52 |
| AM | 10.43 | 75.97 | 44.59 | 24.02 | 31.38 |
| RR | 1.45 | 86.37 | 38.64 | 13.64 | 47.73 |
| PA | 2.91 | 75.82 | 45.36 | 24.18 | 30.46 |
| AP | 4.38 | 73.53 | 54.00 | 26.47 | 19.53 |
| MA | 2.01 | 76.01 | 50.64 | 23.98 | 25.37 |
| NORTHEAST | 0.47 | 76.86 | 48.38 | 23.13 | 28.48 |
| PI | 0.97 | 73.78 | 46.52 | 25.71 | 27.76 |
| CE | 0.72 | 83.94 | 59.48 | 20.06 | 24.46 |
| RN | 0.13 | 88.08 | 65.38 | 11.92 | 22.70 |
| PB | 0.24 | 68.57 | 44.74 | 31.43 | 23.83 |
| PE | 0.58 | 77.45 | 39.14 | 22.55 | 38.31 |
| AL | 0.11 | 78.11 | 46.78 | 21.89 | 31.33 |
| SE | 0.69 | 74.34 | 37.59 | 25.66 | 36.75 |
| BA | 0.33 | 75.58 | 48.76 | 24.42 | 26.82 |
| SOUTHEAST | 1.75 | 76.84 | 55.84 | 23.16 | 21.00 |
| MG | 2.47 | 75.89 | 53.70 | 24.11 | 22.19 |
| ES | 3.29 | 60.52 | 41.53 | 39.48 | 18.99 |
| RJ | 1.38 | 80.07 | 51.15 | 19.92 | 28.92 |
| SP | 1.41 | 79.29 | 62.40 | 20.70 | 16.89 |
| SOUTH | 1.37 | 75.34 | 55.86 | 24.65 | 19.49 |
| PR | 2.72 | 71.85 | 51.58 | 28.15 | 20.27 |
| SC | 0.59 | 83.79 | 64.45 | 16.20 | 19.34 |
| RS | 0.42 | 91.33 | 76.60 | 8.67 | 14.73 |
| C. WEST | 2.15 | 77.78 | 54.48 | 22.22 | 23.30 |
| RO | 2.66 | 84.04 | 47.69 | 15.96 | 36.35 |
| MT | 2.35 | 75.42 | 51.24 | 24.57 | 24.18 |
| MS | 1.70 | 87.56 | 62.97 | 12.43 | 24.59 |
| GO | 2.53 | 74.70 | 54.65 | 25.30 | 20.05 |
| DF | 1.06 | 81.14 | 52.83 | 18.85 | 28.31 |

* Including Dimorphous cases, although not polar.

TABLE VI — *Hanseniasis — Registered Cases 1982.*

| REGIONS AND F. U. | PREV. P/1 000 | TOTAL | | UNDER CONTROL | | | NEW CASES | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TOTAL | | V + D % | TOTAL | | INC. P P/100 |
| | | Nº | % | Nº | % | | Nº | % | |
| BRAZIL | 1.57 | 198 700 | 100 | 123 109 | 61.96 | 62.62 | 16 994 | 100 | 13.4 |
| *AMAZONIA* | 3.95 | 40 553 | 20.41 | 27 314 | 67.35 | 67.20 | 3 632 | 21.4 | 35.2 |
| AC | 10.84 | 3 556 | | 1 417 | 39.85 | 36.42 | 193 | | 58.8 |
| AM | 10.43 | 16 374 | | 10 605 | 64.77 | 62.58 | 1 595 | | 99.7 |
| RR | 1.45 | 132 | | 115 | 87.12 | 96.07 | 25 | | 27.4 |
| PA | 2.91 | 11 002 | | 9 994 | 90.38 | 91.00 | 916 | | 24.2 |
| AP | 4.38 | 850 | | 459 | 54.00 | 61.87 | 118 | | 60.8 |
| MA | 2.01 | 8 639 | | 4 774 | 55.26 | 57.21 | 815 | | 18.9 |
| NORTHEAST | 0.47 | 15 315 | 7.71 | 10 800 | 70.52 | 74.98 | 1 798 | 10.6 | 5.5 |
| PI | 0.97 | 2 201 | | 1 024 | 46.52 | 55.08 | 251 | | 11.0 |
| CE | 0.72 | 4 033 | | 2 692 | 66.75 | 68.86 | 438 | | 7.8 |
| RN | 0.13 | 260 | | 207 | 79.61 | 78.23 | 23 | | 1.1 |
| PB | 0.24 | 684 | | 650 | 95.03 | 95.42 | 78 | | 2.7 |
| PE | 0.58 | 3 733 | | 2 891 | 77.44 | 82.34 | 486 | | 7.5 |
| AL | 0.11 | 233 | | 131 | 56.22 | 57.80 | 31 | | 1.4 |
| SE | 0.69 | 830 | | 515 | 62.05 | 65.38 | 85 | | 7.0 |
| BA | 0.33 | 3 341 | | 2 690 | 80.51 | 88.70 | 406 | | 4.0 |
| SOUTHEAST | 1.75 | 96 630 | 48.63 | 50 668 | 52.43 | 52.21 | 7 023 | 41.4 | 12.7 |
| MG | 2.47 | 34 469 | | 6 536 | 18.96 | 15.90 | 1 991 | | 10.7 |
| ES | 3.29 | 7 072 | | 5 465 | 77.27 | 82.53 | 560 | | 26.1 |
| RJ | 1.38 | 16 616 | | 12 691 | 76.38 | 79.14 | 1 577 | | 13.1 |
| SP | 1.41 | 38 473 | | 25 976 | 67.52 | 66.95 | 2 895 | | 10.6 |
| SOUTH | 1.37 | 27 095 | 13.64 | 23 197 | 85.61 | 89.79 | 2 053 | 12.0 | 10.3 |
| PR | 2.72 | 21 344 | | 18 778 | 87.98 | 93.65 | 1 663 | | 21.2 |
| SC | 0.59 | 2 290 | | 1 564 | 68.29 | 71.27 | 152 | | 3.9 |
| RS | 0.42 | 3 461 | | 2 855 | 82.49 | 84.08 | 238 | | 2.9 |
| CENTRAL-WEST | 2.15 | 19 107 | 9.62 | 11 130 | 58.25 | 60.16 | 2 488 | 14.6 | 28.0 |
| RO | 2.66 | 1 604 | | 1 227 | 76.49 | 75.03 | 132 | | 21.8 |
| MT | 2.35 | 3 060 | | 2 804 | 91.63 | 91.51 | 635 | | 48.8 |
| MS | 1.70 | 2 517 | | 276 | 10.96 | 16.97 | 340 | | 23.0 |
| GO | 2.53 | 10 478 | | 5 542 | 52.89 | 57.56 | 1 093 | | 26.3 |
| DF | 1.06 | 1 448 | | 1 281 | 88.46 | 90.06 | 288 | | 21.1 |

TABLE VII — *Hanseniasis - Distribution of Patients Under Control According to Clinical Forms, Region and Federal Unit.* – Brazil 1982.

| Regions and F. U. | Clinical Forms | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | V + D | | | I | | | T | | |
| | Registered Cases | Under Control | % of Control | Registered Cases | Under Control | % of Control | Registered Cases | Under Control | % of Control |
| BRAZIL | 105 404 | 66 006 | 62.62 | 47 122 | 27 235 | 57.80 | 46 174 | 29 868 | 64.68 |
| *Amazônia* | 18 492 | 12 426 | 67.20 | 10 278 | 6 286 | 61.16 | 11 783 | 8 602 | 73.00 |
| AC | 1 315 | 479 | 36.42 | 1 369 | 636 | 46.45 | 872 | 302 | 34.63 |
| AM | 7 301 | 4 569 | 62.58 | 3 934 | 2 056 | 52.26 | 5 139 | 3 980 | 77.44 |
| RR | 51 | 49 | 96.07 | 18 | 12 | 66.66 | 63 | 54 | 85.71 |
| PA | 4 991 | 4 542 | 91.00 | 2 660 | 2 420 | 90.97 | 3 351 | 2 982 | 88.98 |
| AP | 459 | 284 | 61.87 | 225 | 104 | 46.22 | 166 | 71 | 42.77 |
| MA | 4 375 | 2 503 | 57.21 | 2 072 | 1 058 | 51.06 | 2 192 | 1 213 | 55.33 |
| Northeast | 7 410 | 5 556 | 74.98 | 3 543 | 2 136 | 60.29 | 4 362 | 3 108 | 71.25 |
| PI | 1 024 | 564 | 55.08 | 566 | 211 | 37.28 | 611 | 249 | 40.75 |
| CE | 2 399 | 1 652 | 68.86 | 809 | 414 | 51.17 | 825 | 626 | 75.87 |
| RN | 170 | 133 | 78.23 | 31 | 26 | 83.87 | 59 | 48 | 81.35 |
| PB | 306 | 292 | 95.42 | 215 | 204 | 94.88 | 163 | 154 | 94.47 |
| PE | 1 461 | 1 203 | 82.34 | 842 | 616 | 73.15 | 1 430 | 1 072 | 74.96 |
| AL | 109 | 63 | 57.80 | 51 | 29 | 56.86 | 73 | 39 | 53.42 |
| SE | 312 | 204 | 65.38 | 213 | 124 | 58.21 | 305 | 187 | 61.31 |
| BA | 1 629 | 1 445 | 88.70 | 816 | 512 | 62.74 | 896 | 733 | 81.80 |
| Southeast | 53 957 | 28 169 | 52.21 | 22 377 | 11 004 | 49.17 | 20 296 | 11 495 | 56.64 |
| MG | 18 510 | 2 944 | 15.90 | 8 311 | 1 089 | 13.10 | 7 648 | 2 503 | 32.72 |
| ES | 2 937 | 2 424 | 82.53 | 2 792 | 2 030 | 72.70 | 1 343 | 1 011 | 75.27 |
| RJ | 8 500 | 6 727 | 79.14 | 3 310 | 2 476 | 74.80 | 4 806 | 3 488 | 72.57 |
| SP | 24 010 | 16 074 | 66.95 | 7 964 | 5 409 | 67.92 | 6 499 | 4 493 | 69.13 |
| South | 15 136 | 13 592 | 89.79 | 6 679 | 5 547 | 83.05 | 5 280 | 4 058 | 76.85 |
| PR | 11 009 | 10 311 | 93.65 | 6 008 | 5 066 | 84.32 | 4 327 | 3 401 | 78.59 |
| SC | 1 476 | 1 052 | 71.27 | 371 | 248 | 66.84 | 443 | 264 | 59.59 |
| RS | 2 651 | 2 229 | 84.08 | 300 | 233 | 77.66 | 510 | 393 | 77.05 |
| Central-West | 10 409 | 6 263 | 60.16 | 4 245 | 2 262 | 53.28 | 4 453 | 2 605 | 58.49 |
| RO | 765 | 574 | 75.03 | 256 | 194 | 75.78 | 583 | 459 | 78.73 |
| MT | 1 568 | 1 435 | 91.51 | 752 | 694 | 92.28 | 740 | 675 | 91.21 |
| MS | 1 585 | 269 | 16.97 | 313 | 02 | 0.63 | 619 | 05 | 0.80 |

In table VIII we can appreciate the control data concerning household contacts of V + D patients.

There are 310,198 household contacts of V or D patients corresponding to 105,404 V or D patients, a ratio of 2.94 V or D patient contacts for each V or D patient. But, considering the contacts and cases under control, there are 118,329 contacts for 86,006 V or D patients originating a new ratio of 1.79 V or D patient contacts for one V or D case.

The situation of contact surveillance in Brazil is very poor as only 38.14% of the country's household contacts of V or D patients are controlled. Rates above 75% appear only in five states, while rates under 50% appear in 11 states. Piauí has no control at all, and no information is available about Goias.

In the following table the new cases detected during 1982 according to clinical form and to region and federal unit are shown (Table IX, figures 5 and 6).

The total number of detected new cases in Brazil, that year, was 16,994 with a general incidence rate of 13.40 cases per 100,000 inhabitants.

Of these cases, 74% were Polar forms (the Dimorphous form, which although not Polar, is included here due to the notification system adopted in Brazil), V + D forms (45%) prevailing over T forms (28%): one V or D case to 0.64 T case (Table X, figure 7).

The Amazon region, although presenting the highest incidence rate, 35.29 new cases per 100,000 inhabitants, remained in second place when considering the absolute number of detected new cases: 3,639 or 21.37% of all new cases detected during the year. The proportion of "Polar" forms was 76.91%, the V + D forms (39.71%) almost equalling the T forms (37.20%), the ratio being 1 V or D case to 0.94 T case.

The Northeastern region, presenting the lowest incidence rate (5.52/100,000), registered only 1,798 new cases or 10.59% of all cases, but recorded the highest coefficient in the country for Polar forms 77.42%, the T form (39.71%) slightly above the V + D forms (37.71%) the proportion being 1 V or D case to 1.05 T case.

These two regions, although in contrasting positions with regard to the incidence and prevalence rates, present a very similar picture, considering some features of the disease, such as type and age-group distribution.

The Southeastern region, presenting an incidence rate of 12.70 detected new cases per 100,000 inhabitants, registered the largest number of new cases: 7,023 corresponding to 41.33% of all the nation's

TABLE VIII. — *Hanseniasis - Distribution of Registered Patients and of Household Con*
*Under Control.* – Brazil 1982.

| REGIONS | PATIENTS | | | HOUSEHOLD CONTACTS OF V + D | | |
|---|---|---|---|---|---|---|
| | REGISTERED CASES | CONTROLLED | % OF CONTROL | REGISTERED CASES | CONTROLLED | % CON |
| BRAZIL | 198 700 | 123 109 | 61.96 | 310 198 | 118 329 | 38 |
| *AMAZÓNIA* | 40 553 | 27 314 | 67.35 | 91 734 | 45 784 | 49 |
| AC | 3 556 | 1 417 | 39.85 | 6 641 | 1 338 | 20 |
| AM | 16 374 | 10 605 | 64.77 | 50 000 | 27 332 | 54 |
| RR | 132 | 115 | 87.12 | 278 | 126 | 45 |
| PA | 11 002 | 9 944 | 90.38 | 18 168 | 13 807 | 75 |
| AP | 850 | 459 | 54.00 | 1 589 | 906 | 57 |
| MA | 8 639 | 4 774 | 55.26 | 15 058 | 2 275 | 15 |
| NORTHEAST | 15 315 | 10 800 | 70.52 | 11 187 | 7 468 | 66 |
| PI | 2 201 | 1 024 | 46.52 | ..... | ..... | ... |
| CE | 4 033 | 2 692 | 66.75 | 3 451 | 3 279 | 95 |
| RN | 260 | 207 | 79.61 | 749 | 440 | 58 |
| PB | 684 | 650 | 95.03 | 1 409 | 710 | 50 |
| PE | 3 733 | 2 891 | 77.44 | 2 793 | 1 063 | 38 |
| AL | 215 | 131 | 56.22 | 435 | 54 | 12 |
| SE | 830 | 515 | 62.05 | 300 | 270 | 90 |
| BA | 3 341 | 2 690 | 80.51 | 2 050 | 1 652 | 80 |
| SOUTHEAST | 96 630 | 50 668 | 52.43 | 101 911 | 39 405 | 38 |
| MG | 34 469 | 6 536 | 18.96 | 46 363 | 5 433 | 11 |
| ES | 7 072 | 5 465 | 77.27 | 8 385 | 4 935 | 58 |
| RJ | 16 616 | 12 691 | 76.38 | 11 850 | 6 256 | 52 |
| SP | 38 473 | 25 976 | 67.52 | 35 313 | 22 781 | 64 |
| SOUTH | 27 095 | 23 197 | 85.61 | 94 687 | 18 704 | 19 |
| PR | 21 344 | 18 778 | 87.98 | 84 718 | 15 129 | 17 |
| SC | 2 290 | 1 564 | 68.29 | 4 482 | 2 234 | 49 |
| RS | 3 461 | 2 855 | 82.49 | 5 487 | 1 341 | 24 |
| CENTRAL-WEST | 19 107 | 11 130 | 58.25 | 10 679 | 6 968 | 65 |
| RO | 1 604 | 1 227 | 76.49 | ... | ... | ... |
| MT | 3 060 | 2 804 | 91.63 | 4 361 | 3 386 | 77 |
| MS | 2 517 | 276 | 10.96 | 294 | 86 | 29 |
| GO | 10 478 | 5 542 | 52.89 | 3 121 | 2 052 | 65 |
| OF | 1 448 | 1 281 | 88.46 | 2 903 | 1 444 | 49 |

Source: SES/DNDS/SNPES

TABLE IX — *Distribution of new Cases of Hanseniasis, According to Clinical Forms, by Region and Federal Unit.* – Brazil 1982.

| Regions and F. U. | Clinical Forms | | | | | | Total | Rate */100 000 |
|---|---|---|---|---|---|---|---|---|
| | V + D | | I | | T | | | |
| | Total | % | Total | % | Total | % | | |
| BRAZIL | 7 630 | 44.90 | 4 418 | 26.00 | 4 939 | 29.06 | 16 994 | 13.40 |
| *Amazônia* | 1 435 | 39.51 | 846 | 23.29 | 1 351 | 37.20 | 3 632 | 35.29 |
| AC | 73 | 37.83 | 40 | 20.72 | 80 | 41.45 | 193 | 58.84 |
| AM | 601 | 38.40 | 302 | 19.29 | 662 | 42.31 | 1 565 | 99.74 |
| RR | 10 | 40.00 | 01 | 4.00 | 14 | 56.00 | 25 | 27.47 |
| PA | 371 | 40.50 | 234 | 25.54 | 311 | 33.96 | 916 | 24.23 |
| AP | 42 | 35.59 | 49 | 41.53 | 27 | 22.88 | 118 | 60.82 |
| MA | 338 | 41.47 | 220 | 26.99 | 257 | 31.54 | 815 | 18.95 |
| Northeast | 678 | 37.71 | 399 | 22.19 | 714 | 39.71 | 1 798 | 5.52 |
| PI | 100 | 39.85 | 75 | 29.88 | 76 | 30.27 | 251 | 11.03 |
| CE | 195 | 44.52 | 93 | 21.24 | 150 | 34.24 | 438 | 7.85 |
| RN | 10 | 43.48 | 05 | 21.74 | 08 | 34.78 | 23 | 1.14 |
| PB | 29 | 37.18 | 29 | 37.18 | 20 | 25.64 | 78 | 2.70 |
| PE | 133 | 27.37 | 97 | 19.96 | 256 | 52.67 | 486 | 7.54 |
| AL | 13 | 41.94 | 09 | 29.03 | 09 | 29.03 | 31 | 1.47 |
| SE | 24 | 28.24 | 17 | 20.00 | 44 | 51.76 | 85 | 7.04 |
| BA * | 174 | 42.86 | 74 | 18.23 | 151 | 37.19 | 406 | 4.03 |
| Southeast | 3 201 | 45.58 | 1 965 | 27.98 | 1 857 | 26.44 | 7 023 | 12.70 |
| MG | 955 | 48.34 | 568 | 28.25 | 468 | 23.41 | 1 991 | 10.77 |
| ES | 240 | 42.85 | 218 | 38.93 | 102 | 18.22 | 560 | 26.11 |
| RJ | 666 | 42.23 | 348 | 22.06 | 563 | 35.71 | 1 577 | 13.15 |
| SP | 1 340 | 46.29 | 831 | 28.70 | 724 | 25.01 | 2 895 | 10.64 |
| South | 1 137 | 55.38 | 522 | 25.42 | 394 | 19.20 | 2 053 | 10.37 |
| PR | 890 | 53.52 | 465 | 27.96 | 308 | 18.52 | 1 663 | 21.22 |
| SC | 95 | 62.50 | 31 | 20.39 | 26 | 17.11 | 152 | 3.95 |
| RS | 152 | 63.86 | 26 | 10.93 | 60 | 25.21 | 238 | 2.93 |
| Central-West | 1 179 | 47.39 | 686 | 27.57 | 623 | 25.04 | 2 488 | 28.00 |
| RO | 54 | 40.91 | 32 | 24.24 | 46 | 34.85 | 132 | 21.89 |
| MT | 278 | 43.78 | 195 | 30.71 | 162 | 25.51 | 635 | 48.88 |
| MS | 228 | 67.06 | 43 | 12.65 | 69 | 20.29 | 340 | 23.00 |
| GO | 520 | 47.57 | 284 | 25.99 | 289 | 26.44 | 1 093 | 26.39 |
| DF | 99 | 34.37 | 132 | 45.83 | 57 | 19.80 | 288 | 21.11 |

Source: SES/DNDS/SNPES

* The Clinical form of 7 patients was not assigned.

## HANSENIASIS – INCIDENCE

### ABSOLUTE NUMBERS AND RATE PER 100,000 INHABITANTS ACCORDING TO REGIONS – BRAZIL – 1982

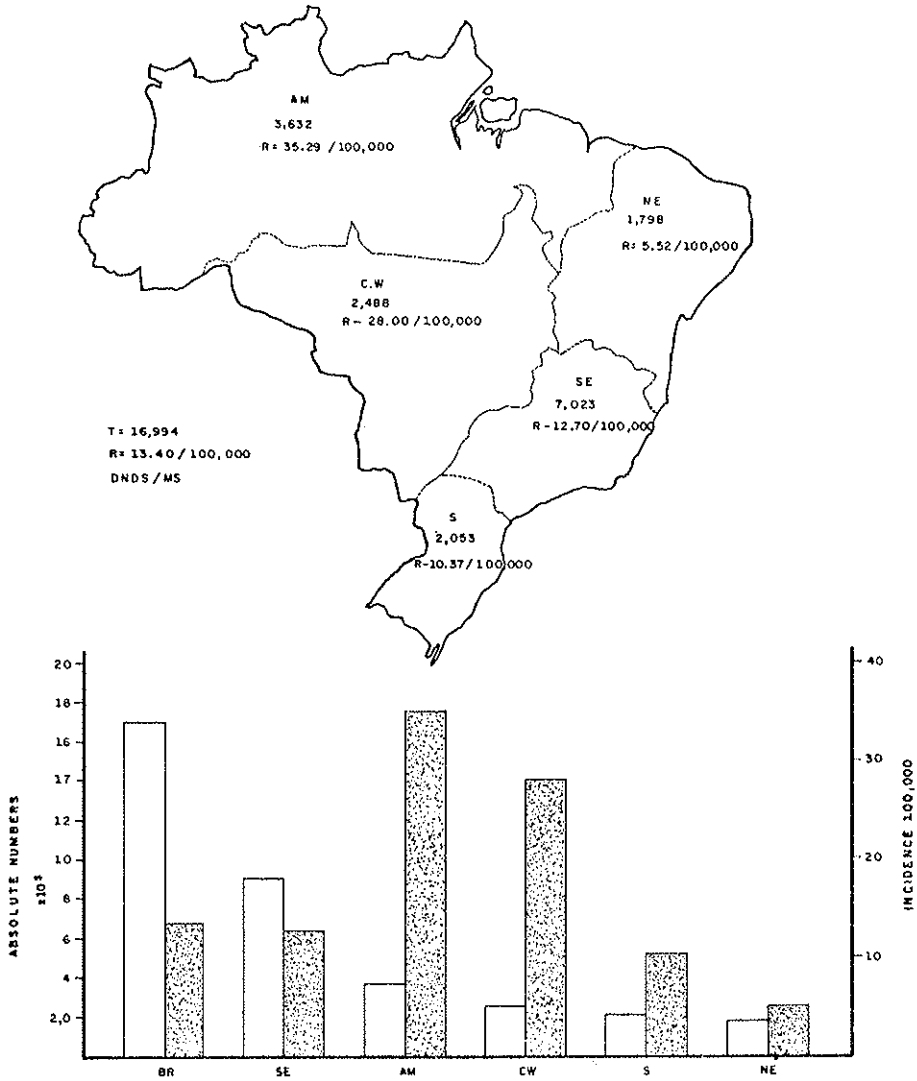



FIG. 5

## HANSENIASIS – INCIDENCE

### ABSOLUTE NUMBERS AND RATE PER 100,000 INHABITANTS ACCORDING TO FEDERAL UNIT

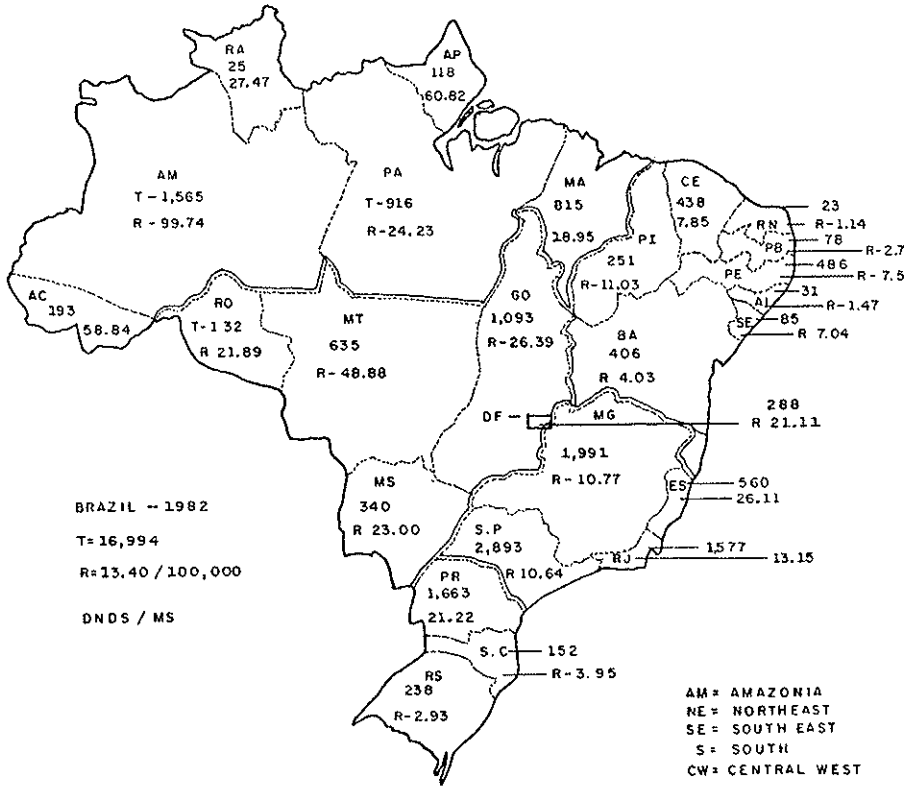



FIG. 6

TABLE X — *Hanseniasis – Incidence Rates According to Clinical Forms and Regions* – Brazil 1982.

| REGION | DETECTED CASES | INC. 100 000 | POLAR % | V + D % | I % | T % | NI % |
|---|---|---|---|---|---|---|---|
| BRAZIL * | 16 994 | 13.40 | 74.00 | 45.00 | 26.00 | 29.00 | 55.00 |
| AMAZÔNIA | 3 632 | 35.29 | 76.71 | 39.51 | 23.29 | 37.20 | 60.49 |
| NORTHEAST | 1 798 | 5.52 | 77.42 | 37.71 | 22.16 | 39.71 | 61.87 |
| SOUTHEAST | 7 023 | 12.70 | 72.02 | 45.58 | 27.98 | 26.44 | 54.42 |
| SOUTH | 2 053 | 10.37 | 74.58 | 55.38 | 25.42 | 19.20 | 44.62 |
| C. WEST | 2 488 | 28.00 | 72.43 | 47.39 | 25.57 | 25.04 | 50.61 |

* Coefficients in round numbers.

detected new cases. The proportion of "Polar" forms was 72.02%, the lowest in the country, but the V + D cases (46.58%) prevailed over the T cases (26.44%) in the proportion of one V or D case to 0.58 T case.

This region, in comparison with the others, has recorded the highest coefficient of I forms: 27.98%.

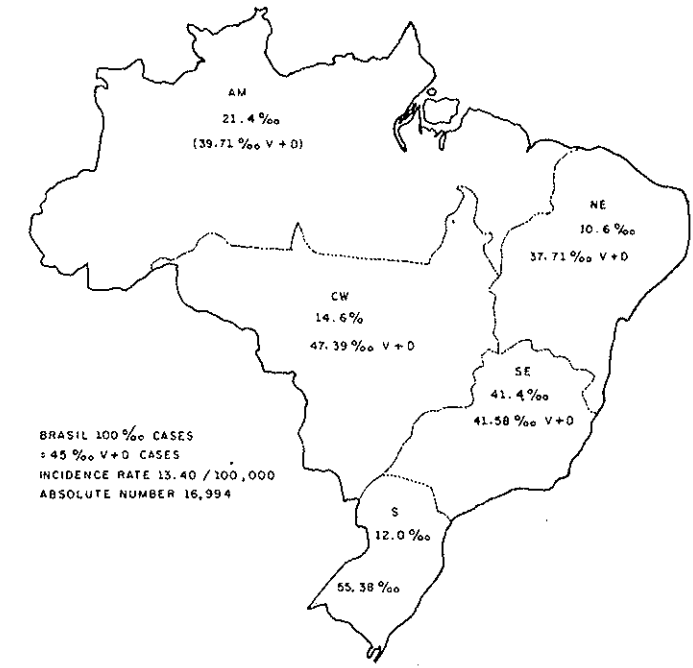
The Southern region, with an incidence rate of 12.08/100,000 inhabitants, presented 2,053 new cases and 74.58% of "Polar" forms showing the highest coefficient of V + D forms of all regions: 55.38%, against 19.20% of T cases. The proportion is of one V or D case to 0.35 T case.

Finally the Central-Western region, with an incidence rate of 14.64 new cases per 100,000 inhabitants, shows a total of 2,448 detected new cases. The coefficient of "Polar" forms attained 72.43%, the V + D cases (47.39%) prevailing over the T cases (25.04%) in the proportion of 1 V or D case to 0.53 T forms.

Comparing the situation in the federal units, one can see that in the Southeastern, Southern and Central-Western regions, the component states followed the pattern of their region, (Table IX) the V + D forms prevailing in all of them with one exception: the Federal District, which presented a predominance of I cases.

HANSENIASIS – INCIDENCE

PERCENTAGE OF DETECTED NEW CASES AND V + D FORMS ACCORDING TO REGIONS – BRAZIL – 1982



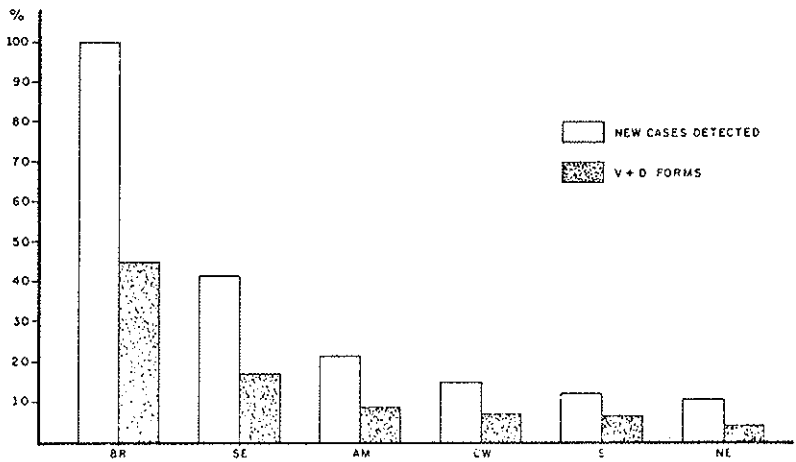




FIG. 7

In the Amazon region, with a slightly higher proportion of V + D cases (39.51%) over T cases (37.20%), V and D cases prevailed in only two federal units: Pará and Maranhão, T cases prevailed in three units and I cases in one unit.

In the Northeast, the only region with a predominance of T forms (although small: 39.71% of T against 37.71% of V + D cases), five of the eight states there included presented prevailing V + D forms, while only two of them registered a predominance of T forms, and in one the V + D and I coefficient was the same: 37.18%.

Of the detected new cases, the non-infectious ones (T + I) predominated in general and in all the regions, except in the Southern region, where infectious new cases predominated as shown in table X.

Now if the incidence according to the age-groups is examined (table XI), a sharp difference is noted between the number of detected new cases in the age-groups 0-14 years and in the 15 years and over age-group (table XII).

The total new cases detected in the country amounted to 16,994, giving an incidence rate of 13.40 per 100,000 inhabitants. Of these, only 1,407 or 8.28% fell on the 0-14 years age-group, and were so divided among the regions:

1 — Amazon region – 644 detected new cases or 17.73% of all the region's new cases;

2 — Northeastern region – 199 detected new cases or 11.07% of all the region's new cases;

3 — Southeastern region – 328 detected new cases or 4.67% of all the region's new cases;

4 — Southern region – 77 detected new cases or 3.75% of all the region's new cases;

5 — Central-Western region – 159 detected new cases or 6.39% of all the region's new cases.

These results are similar to those described by Agricola & Risi (2), in 1946.

Considering the federal units, the portion of detected new cases in the 0-14 years group presented a great diversity as is shown in table XIII.

TABLE XI — *Hanseniasis - Distribution, by Region and Federal Unit, of Registered New Cases According to Clinical Form and Age-Groups* – Brazil 1982.

| REGIONS AND F. U. | CLINICAL FORMS | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | V + D | | I | | T | | TOTAL | | |
| | 0–14 years | 15 and over | 0–14 years | 15 and over | 0–14 years | 15 and over | 0–14 years | 15 and over | |
| BRAZIL | 354 | 7 264 | 523 | 3 892 | 530 | 4 404 | 1 407 | 15 567 | 16 994 |
| *AMAZÔNIA* | 163 | 1 272 | 203 | 643 | 278 | 1 073 | 644 | 2 988 | 3 632 |
| AC | 02 | 71 | 03 | 37 | 04 | 76 | 09 | 184 | 193 |
| AM | 90 | 511 | 94 | 208 | 188 | 474 | 372 | 1 193 | 1 565 |
| RR | — | 10 | — | 01 | — | 14 | — | 25 | 25 |
| PA | 43 | 328 | 54 | 180 | 54 | 257 | 151 | 765 | 916 |
| AP | 03 | 39 | 23 | 26 | 03 | 24 | 29 | 89 | 118 |
| MA | 25 | 313 | 29 | 191 | 29 | 228 | 83 | 732 | 815 |
| NORTHEAST | 42 | 631 | 60 | 339 | 97 | 615 | 199 | 1 592 | 1 798 |
| PI | 08 | 92 | 03 | 72 | 08 | 68 | 19 | 232 | 251 |
| CE | 13 | 182 | 09 | 84 | 04 | 146 | 26 | 412 | 438 |
| RN | — | 10 | — | 05 | — | 08 | — | 23 | 23 |
| PB | — | 29 | 03 | 26 | 07 | 13 | 10 | 68 | 78 |
| PE | 12 | 121 | 24 | 73 | 55 | 201 | 91 | 395 | 486 |
| AL | 02 | 11 | 06 | 03 | — | 09 | 08 | 23 | 31 |
| SE | 02 | 22 | 03 | 14 | 01 | 43 | 06 | 79 | 85 |
| BA * | 05 | 164 | 12 | 62 | 22 | 127 | 39 | 360 | 406 |
| SOUTHEAST | 70 | 3 124 | 164 | 1 798 | 94 | 1 760 | 328 | 6 682 | 7 023 |
| MG ** | 21 | 927 | 67 | 498 | 18 | 447 | 106 | 1 872 | 1 991 |
| ES | 06 | 234 | 05 | 213 | 02 | 100 | 13 | 547 | 560 |
| RJ | 25 | 641 | 32 | 316 | 52 | 511 | 109 | 1 468 | 1 577 |
| SP | 18 | 1 322 | 60 | 771 | 22 | 702 | 100 | 2 795 | 2 895 |
| SOUTH | 25 | 1 112 | 41 | 481 | 11 | 383 | 77 | 1 976 | 2 053 |
| PR | 22 | 868 | 40 | 425 | 09 | 299 | 71 | 1 592 | 1 663 |
| SC | 01 | 94 | 01 | 30 | 01 | 25 | 03 | 149 | 152 |
| RS | 02 | 150 | — | 26 | 01 | 59 | 03 | 235 | 238 |
| CENTRAL-WEST | 54 | 1 125 | 55 | 631 | 50 | 573 | 159 | 2 329 | 2 488 |
| RO | 13 | 41 | 02 | 30 | 07 | 39 | 22 | 110 | 132 |
| MT | 10 | 268 | 16 | 179 | 12 | 150 | 38 | 597 | 635 |
| MS | 16 | 212 | 04 | 39 | 06 | 63 | 26 | 314 | 340 |
| GO | 14 | 506 | 25 | 259 | 18 | 271 | 57 | 1 036 | 1 093 |
| DF | 01 | 98 | 08 | 124 | 07 | 50 | 16 | 272 | 288 |

TABLE XII — *Distribution of New Cases of Hanseniasis According to Age-Groups, Region and Federal Unit* – Brazil 1982.

| REGIONS AND F. U. | AGE-GROUPS | | | | TOTAL |
|---|---|---|---|---|---|
| | 0 to 14 years | | 15 years and more | | |
| | TOTAL | % | TOTAL | % | |
| BRAZIL | 1 407 | 8.28 | 15 567 | 91.60 | 16 994 |
| *AMAZÔNIA* | 644 | 17.73 | 2 988 | 82.27 | 3 632 |
| AC | 09 | 4.66 | 184 | 95.34 | 193 |
| AM | 372 | 23.76 | 1 193 | 76.24 | 1 565 |
| RR | ..... | ..... | 25 | 100.00 | 25 |
| PA | 151 | 16.48 | 765 | 83.52 | 916 |
| AP | 29 | 24.58 | 89 | 75.42 | 118 |
| MA | 83 | 10.18 | 732 | 89.82 | 815 |
| NORTHEAST | 199 | 11.07 | 1 592 | 88.54 | 1 798 |
| PI | 19 | 7.56 | 232 | 92.44 | 251 |
| CE | 26 | 5.93 | 412 | 94.07 | 438 |
| RN | ..... | ..... | 23 | 100.00 | 23 |
| PB | 10 | 12.82 | 68 | 87.18 | 78 |
| PE | 91 | 18.72 | 395 | 81.28 | 486 |
| AL | 08 | 25.80 | 23 | 74.20 | 31 |
| SE | 06 | 7.05 | 79 | 92.95 | 85 |
| BA | 39 | 9.61 | 360 | 88.67 | 406 * |
| SOUTHEAST | 328 | 4.67 | 6 682 | 95.14 | 7 023 |
| MG | 106 | 5.32 | 1 872 | 94.02 | 1 991 ** |
| ES | 13 | 2.32 | 547 | 97.68 | 560 |
| RJ | 109 | 6.91 | 1 468 | 93.09 | 1 577 |
| SP | 100 | 3.45 | 2 795 | 96.54 | 2 895 |
| SOUTH | 77 | 3.75 | 1 976 | 96.25 | 2 053 |
| PR | 71 | 4.26 | 1 592 | 95.74 | 1 663 |
| SC | 03 | 1.97 | 149 | 98.03 | 152 |
| RS | 03 | 1.26 | 235 | 98.74 | 238 |
| CENTRAL-WEST | 159 | 6.39 | 2 329 | 93.61 | 2 488 |
| RO | 22 | 16.66 | 110 | 83.34 | 132 |
| MT | 38 | 5.98 | 597 | 94.02 | 635 |
| MS | 26 | 7.64 | 314 | 92.36 | 340 |
| GO | 57 | 5.21 | 1 036 | 94.79 | 1 093 |
| DF | 16 | 5.55 | 272 | 94.45 | 288 |

Source: SES/DNDS/SNPES.

* Unknown age for 07 cases included.
** Unknown age for 13 cases included.

TABLE XIII — *Hanseniasis Absolute Numbers and Proportion of New Cases in Patients Under 15 Years of Age According to Clinical Form and to Region and Federal Unit* – Brazil 1982.

| Region and F. U. | V + D | | I | | T | | Total |
|---|---|---|---|---|---|---|---|
| | Number of Cases | % | Number of Cases | % | Number of Cases | % | |
| BRAZIL | 354 | 25.16 | 523 | 37.17 | 530 | 37.67 | 1 407 |
| *Amazônia* | 163 | 25.31 | 203 | 31.52 | 278 | 43.17 | 644 |
| AC | 02 | 22.22 | 03 | 33.33 | 04 | 44.45 | 09 |
| AM | 90 | 24.19 | 94 | 25.27 | 188 | 50.54 | 372 |
| RR | ... | ... | ... | ... | ... | ... | ... |
| PA | 43 | 28.48 | 54 | 35.76 | 54 | 35.76 | 151 |
| AP | 03 | 10.34 | 23 | 79.32 | 03 | 10.34 | 29 |
| MA | 25 | 30.12 | 29 | 34.94 | 29 | 34.94 | 83 |
| Northeast | 42 | 21.11 | 60 | 30.15 | 97 | 48.74 | 199 |
| PI | 08 | 42.11 | 03 | 15.78 | 08 | 42.11 | 19 |
| CE | 13 | 50.00 | 09 | 34.62 | 04 | 15.38 | 26 |
| RN | ... | ... | ... | ... | ... | ... | ... |
| PB | ... | ... | 03 | 30.00 | 07 | 70.00 | 10 |
| PE | 12 | 13.19 | 24 | 26.37 | 55 | 60.44 | 91 |
| AL | 02 | 25.00 | 06 | 75.00 | — | ... | 08 |
| SE | 02 | 33.33 | 03 | 50.00 | 01 | 16.67 | 06 |
| BA | 05 | 12.82 | 12 | 30.77 | 22 | 56.41 | 39 |
| Southeast | 70 | 21.34 | 164 | 50.00 | 94 | 28.66 | 328 |
| MG | 21 | 19.81 | 67 | 63.21 | 18 | 16.98 | 106 |
| ES | 06 | 46.15 | 05 | 38.46 | 02 | 15.39 | 13 |
| RJ | 25 | 22.93 | 32 | 29.36 | 52 | 47.71 | 109 |
| SP | 18 | 18.00 | 60 | 60.00 | 22 | 22.00 | 100 |
| South | 25 | 32.47 | 41 | 53.25 | 11 | 14.28 | 77 |
| PR | 22 | 30.98 | 40 | 56.34 | 09 | 12.68 | 71 |
| SC | 01 | 33.33 | 01 | 33.33 | 01 | 33.33 | 03 |
| RS | 02 | 66.67 | ... | ... | 01 | 33.33 | 03 |
| Central-West | 54 | 33.96 | 55 | 34.59 | 50 | 31.45 | 159 |
| RO | 13 | 59.09 | 02 | 9.09 | 07 | 31.82 | 22 |
| MT | 10 | 26.31 | 16 | 42.11 | 12 | 31.58 | 38 |
| MS | 16 | 61.54 | 04 | 15.38 | 06 | 23.08 | 26 |
| GO | 14 | 24.56 | 25 | 43.86 | 18 | 31.58 | 57 |
| DF | 01 | 6.25 | 08 | 50.00 | 07 | 43.75 | 16 |

Source: *Health Services of the Federal Unit.*
MS/SNPES/DNDS-SE.

The following facts stand out:

1º — In the Amazon region (17.73% of all cases), the very low coefficient 4.66% in the state of Acre and no new cases detected in this age-group in Roraima; (few patients);

2º — The extreme variation among the age-group coefficients of detected cases within the states of the Northeastern region (11.07%), where they varied from 25.80% in Alagoas to 5.93% in Ceará and no new cases recorded in Rio Grande do Norte;

3º — The position of Rondônia, with 16.66% of the state's detected cases for this age-group, and the other four units of the Central-Western region (6.39%) with coefficients only varying between 7.64% and 5.21%.

Referring to the clinical forms in this age-group (Table XIII) and considering the whole country, we will see that the T form (37.67%) prevailed over the V + D (25.16%) and almost equalled the I form (37.17%).

Very high coefficients of T forms are found in the Northeastern (48.74%) and Amazonia regions (43.17%).

In the other three regions the Indeterminate form prevailed, with outstanding coefficients such as 53.25% and 50% in the Southern and Southeastern regions, respectively. The Central-Western region showed only 34.59% of I forms, a coefficient still slightly higher than those of the other two clinical forms.

The data concerning the federal units show that:

a — in five of them the V + D form prevailed over the two others, and with very high coefficients in some units such as 66.67% in Rio Grande do Sul;

b — in nine the Indeterminate form prevailed, with very high coefficients in several of them, like Amapá – 79.32%, Alagoas – 75%, Minas Gerais – 63.21%, São Paulo – 60%, Paraná – 56.43% and Brasília, the federal capital, with 50% of I forms;

c — the T form prevailed only in six states, two in the Amazon region, three in the Northeast, and one in the Southeastern region;

d — the T equalled the I form in Pará and Maranhão states;

e — the T form equalled the V + D in Piauí state;

f — in Santa Catarina the three forms were in equilibrium;

g — no new cases in this age-group were recorded in Roraima;

h — no information about this item was reported by Rio Grande do Norte.

Examining the 15 years and over age-group, we verify that in Brazil, as expected, the V + D form predominates with 46.66% of the detected new cases, and the same occurs in 21 of the federal units. In four of them located in the Northeastern and Amazonia region, the I form prevails, as occurs also in the Federal District, with 45.59% of I cases (table XIV).

Comparing both age-groups in the general and sick population, we verify that in the 0-14 and 15 and over age-groups, coefficients of participation in the general population are 37% to 63% (1:1.70) and in the sick population 8.28 to 91.72% (1:11.08), respectively.

The corresponding incidence rates are: 2.99 and 19.5 per thousand inhabitants, a low rate in the first group.

Referring to the general population, the indexes are: 1.11 per thousand in the first age-group and 12.29 in the 15 and over age-group. Here we must bear in mind three factors: exposition (time and index case), incubation period and lack of early diagnosis.

The attack rate in household contacts of V or D patients under surveillance that contracted Hanseniasis is shown in table XV.

In general this rate is low: 2.09% for the country.

For the regions the rates are: Amazonia: 1.39% – Northeast: 2.11%; Southeast: 2.92%; South: 1.40% and Central-West: 5.39%.

Considering the federal units, higher attack rates are found in: Minas Gerais (8.57%), Pernambuco (6.49%), Maranhão (6.46%) and Goiás (5.26%).

The lowest rates are found in Amazonas (0.88%), Rio Grande do Norte (0.68%), Paraíba (0.56%), Acre (0.44%) and Bahia (0.24%).

In Sergipe no household contacts of V or D patients contracting Hanseniasis are shown. Rondônia and Mato Grosso present no information about this subject and no contact surveillance is carried out in Piauí.

Outstanding is the very singular position of Mato Grosso do Sul, which figures with the amazing attack rate among household contacts of 74.41%.

In table XVI the absolute numbers are shown of: registered household contacts of V or D patients, those under surveillance and those who contracted the disease, according to clinical form and to region and federal unit.

TABLE XIV — *Hanseniasis Absolute Numbers and Proportion of New Cases in Patients Aged 15 Years or More According to Clinical Form and to Region and Federal Unit* – Brazil 1982.

| Region and F. U. | V + D | | I | | T | | Total |
|---|---|---|---|---|---|---|---|
| | Number of Cases | % | Number of Cases | % | Number of Cases | % | |
| BRAZIL | 7 264 | 46.66 | 3 892 | 25.00 | 4 404 | 28.29 | 15 567 |
| *Amazônia* | 1 272 | 42.57 | 643 | 21.52 | 1 073 | 35.91 | 2 988 |
| AC | 71 | 38.59 | 37 | 20.11 | 76 | 41.30 | 184 |
| AM | 511 | 42.83 | 208 | 17.44 | 474 | 39.73 | 1 193 |
| RR | 10 | 40.00 | 01 | 4.00 | 14 | 56.00 | 25 |
| PA | 328 | 42.88 | 180 | 23.53 | 257 | 33.59 | 765 |
| AP | 39 | 43.82 | 26 | 29.21 | 24 | 26.97 | 89 |
| MA | 313 | 42.76 | 191 | 26.09 | 228 | 31.15 | 732 |
| Northeast | 631 | 39.64 | 339 | 21.29 | 615 | 38.63 | 1 592 |
| PI | 92 | 39.65 | 72 | 31.03 | 68 | 29.32 | 232 |
| CE | 182 | 44.17 | 84 | 20.39 | 146 | 35.44 | 412 |
| RN | 10 | 43.48 | 05 | 21.74 | 08 | 34.78 | 23 |
| PB | 29 | 42.65 | 26 | 38.23 | 13 | 19.12 | 68 |
| PE | 121 | 30.63 | 73 | 18.48 | 201 | 50.89 | 395 |
| AL | 11 | 47.83 | 03 | 13.04 | 09 | 39.13 | 23 |
| SE | 22 | 27.85 | 14 | 17.72 | 43 | 54.43 | 79 |
| BA | 164 | 45.56 | 62 | 17.22 | 127 | 35.28 | 360 * |
| Southeast | 3 124 | 46.75 | 1 798 | 26.91 | 1 760 | 26.34 | 6 682 |
| MG | 927 | 49.52 | 498 | 26.60 | 447 | 23.88 | 1 872 |
| ES | 234 | 42.78 | 213 | 38.94 | 100 | 18.28 | 547 |
| RJ | 641 | 43.66 | 316 | 21.53 | 511 | 34.81 | 1 468 |
| SP | 1 322 | 47.30 | 771 | 27.58 | 702 | 25.12 | 2 795 |
| South | 1 112 | 56.28 | 481 | 24.34 | 383 | 19.38 | 1 976 |
| PR | 868 | 54.52 | 425 | 26.70 | 299 | 18.78 | 1 592 |
| SC | 94 | 63.09 | 30 | 20.13 | 25 | 16.78 | 149 |
| RS | 150 | 63.83 | 26 | 11.06 | 59 | 25.11 | 235 |
| Central-West | 1 125 | 48.31 | 631 | 27.09 | 573 | 24,60 | 2 329 |
| RO | 41 | 37.27 | 30 | 27.27 | 39 | 35.46 | 110 |
| MT | 268 | 44.89 | 179 | 29.98 | 150 | 25.13 | 597 |
| MS | 212 | 67.52 | 39 | 12.42 | 63 | 20.06 | 314 |
| GO | 506 | 48.84 | 259 | 25.00 | 271 | 26.16 | 1 036 |
| DF | 98 | 36.03 | 124 | 45.59 | 50 | 18.38 | 272 |

Source: *Health Services of the Federal Unit.*

* Unknown age for 07 cases included.

MS/SNPES/DNDS-SE.

TABLE XV — *Hanseniasis - Distribution, According to Region and Federal Unit, Ho*
*Contacts of* V + D *Patients that Became Sick During the Period* – Brazil 1982.

| REGIONS AND F. U. | REGISTERED CONTACTS OF V + D PATIENTS | V + D PATIENTS CONTACTS UNDER CONTROL | V + D PATIENTS CONTACTS THAT BECAME SICK | % OF CONTACTS THAT BECAME SICK | INCIDENCE 100 000 C UNDER C |
|---|---|---|---|---|---|
| BRAZIL | 310 198 | 118 329 | 2 403 | 2.09 | 2 09 |
| *AMAZÔNIA* | 91 734 | 45 784 | 638 | 1.39 | 1 39 |
| AC | 6 641 | 1 338 | 06 | 0.44 | 44 |
| AM | 50 000 | 27 332 | 243 | 0.88 | 88 |
| RR | 278 | 126 | 03 | 2.38 | 2 38 |
| PA | 18 168 | 13 807 | 203 | 1.47 | 1 47 |
| AP | 1 589 | 906 | 36 | 3.97 | 3 37 |
| MA | 15 058 | 2 275 | 147 | 6.46 | 6 46 |
| NORTHEAST | 11 187 | 7 468 | 158 | 2.11 | 2 11 |
| PI | ..... | ..... | ..... | ..... | |
| CE | 3 451 | 3 279 | 76 | 2.31 | 2 31 |
| RN | 749 | 440 | 03 | 0.68 | 68 |
| PB | 1 409 | 710 | 04 | 0.56 | 56 |
| PE | 2 793 | 1 063 | 69 | 6.49 | 6 49 |
| AL | 435 | 54 | 02 | 3.70 | 3 70 |
| SE | 300 | 270 | ..... | ..... | |
| BA | 2 050 | 1 652 | 04 | 0.24 | 24 |
| SOUTHEAST | 101 911 | 39 405 | 1 152 | 2.92 | 2 92 |
| MG | 46 363 | 5 433 | 466 | 8.57 | 8 57 |
| ES | 8 385 | 4 935 | 77 | 1.56 | 1 56 |
| RS | 11 850 | 6 256 | 109 | 1.74 | 1 74 |
| SP | 35 313 | 22 781 | 500 | 2.19 | 2 19 |
| SOUTH | 94 687 | 18 704 | 262 | 1.40 | 1 40 |
| PR | 84 718 | 15 129 | 197 | 1.30 | 1 30 |
| SC | 4 482 | 2 234 | 26 | 1.16 | 1 16 |
| RS | 5 487 | 1 341 | 39 | 2.90 | 2 90 |
| CENTRAL-WEST | 10 679 | 6 968 | 193 | 5.39 | 5 38 |
| RO | ... | ... | ... | ... | .. |
| MT | 4 361 | 3 386 | ... | ... | .. |
| MS | 294 | 86 | 64 | 74.41 | 74 41 |
| GO | 3 121 | 2 052 | 108 | 5.26 | 5 26 |
| DF | 2 903 | 1 444 | 21 | 1.45 | 1 45 |

Source: SES — SE-DNDS/MS

TABLE XVI — *Distribution of Virchowians and Dimorphous Patients Household Contacts That Contracted Hanseniasis in the Period, According to Clinical Form and to Region and Federal Unit* – Brazil 1982.

| Region and F. U. | Registered Contacts | Under Surveill. | Contracted Hanseniasis | | | |
|---|---|---|---|---|---|---|
| | | | Total | V + D | I | T |
| BRAZIL | 310 198 | 118 329 | 2 403 | 912 | 937 | 548 |
| *Amazônia* | 91 734 | 45 784 | 638 | 247 | 198 | 187 |
| AC | 6 641 | 1 338 | 06 | ... | ... | ... |
| AM | 50 000 | 27 332 | 243 | 119 | 49 | 75 |
| RR | 278 | 126 | 03 | 01 | ---- | 02 |
| PA | 18 168 | 13 807 | 203 | 72 | 67 | 64 |
| AP | 1 589 | 906 | 36 | 06 | 22 | 08 |
| MA | 15 058 | 2 275 | 147 | 49 | 60 | 38 |
| Northeast | 11 187 | 7 468 | 158 | 51 | 58 | 49 |
| PI | ---- | ---- | ---- | ---- | ---- | ---- |
| CE | 3 451 | 3 279 | 76 | 31 | 24 | 21 |
| RN | 749 | 440 | 03 | 03 | ---- | ---- |
| PB | 1 409 | 710 | 04 | 01 | 02 | 01 |
| PE | 2 793 | 1 063 | 69 | 11 | 32 | 26 |
| AL | 435 | 54 | 02 | 02 | ---- | ---- |
| SE | 300 | 270 | ---- | ---- | ---- | ---- |
| BA | 2 050 | 1 652 | 04 | 03 | ---- | 01 |
| Southeast | 101 911 | 39 405 | 1 152 | 413 | 514 | 225 |
| MG | 46 363 | 5 433 | 466 | 197 | 183 | 86 |
| ES | 8 385 | 4 935 | 77 | 29 | 33 | 15 |
| RJ | 11 850 | 6 256 | 109 | 27 | 47 | 35 |
| SP | 35 313 | 22 781 | 500 | 160 | 251 | 89 |
| South | 94 687 | 18 704 | 262 | 119 | 100 | 43 |
| PR | 84 718 | 15 129 | 197 | 83 | 80 | 34 |
| SC | 4 482 | 2 234 | 26 | 13 | 10 | 03 |
| RS | 5 487 | 1 341 | 39 | 23 | 10 | 06 |
| Central-West | 10 679 | 6 968 | 193 | 82 | 67 | 44 |
| RO | ... | ... | ... | ... | ... | ... |
| MT | 4 361 | 3 386 | ... | ... | ... | ... |
| MS | 294 | 86 | 64 | 28 | 17 | 19 |
| GO | 3 121 | 2 052 | 108 | 42 | 45 | 21 |
| DF | 2 903 | 1 444 | 21 | 12 | 05 | 04 |

Source: SES
SE-DNDS/MS

In general more contacts contracted I forms than other forms (I = 38.99%, L = 37.95% and T = 22.80%).

Considering the regions, in Amazonia (39%), Southern (45%) and Central-Western regions (42%) V + D forms have predominated in the detected new cases in contacts.

A predominance of I forms is observed among new cases detected in contacts that occur in the Southeastern (45%) and Northeastern regions (37%).

Currently due to the new orientation adopted by the Public Health authorities, there are very few patients still kept in seclusion, practically all because of social reasons.

In table XVII the absolute numbers, proportion of in patients and ratio of in-patients to number of total registered cases are shown. As expected, the great majority of in-patients are V or D cases, as much in the country in general as in all regions, exception being made for the state of Rondônia, where 51.85% of the in-patients are tuberculoid cases.

Table XX shows the historical series of new cases detected in Brazil in the period comprising the years 1946 to 1982. In this series we can observe that the incidence rate increased steadily from 1946 to 1959, then it decreased, attaining the lowest incidence rate recorded in the nation: 5.76/100,000 inhabitants, in 1966.

From this point onwards it increased again, reaching the highest coefficients in the last four years recorded in table XX.

The corresponding curves and linear regression calculated for the incidence rate, supplied by my colleague, Sergio Moreira Viana, are shown in figures 8, 9 and 10.

According to Gonçalves (5) the endemicity is spreading in Brazil with a relative incrementation of the T forms.

Many factors can be influencing those data, such as internal migrations, increasing rate of urbanization and above all the better or worse action of the Health Services.

According to these data also, it seems that almost 40 years of sulphone therapy have not had much effect on the disease control.

TABLE XVII — *Hanseniasis - Absolute Numbers and Proportion of Hospitalized Patients, According to Clinical Form and to Region and Federal Unit* – Brazil 1982.

| Region and F. U. | V + D | | I | | T | | Total | % Ratio to Nº of Reg. Pat. |
|---|---|---|---|---|---|---|---|---|
| | Nº | % | Nº | % | Nº | % | | |
| BRAZIL | 7 059 | 78.75 | 949 | 10.59 | 956 | 10.66 | 8 964 | 4.51 |
| Amazônia | 870 | 79.02 | 62 | 5.63 | 169 | 15.35 | 1 101 | 2.71 |
| AC | 131 | 95.62 | — | — | 06 | 4.38 | 137 | 3.85 |
| AM | 78 | 70.91 | — | — | 32 | 29.09 | 110 | 0.67 |
| RR | 02 | 100.00 | — | — | — | — | 02 | 1.51 |
| PA | 587 | 77.96 | 47 | 6.24 | 119 | 15.80 | 753 | 6.84 |
| AP | — | — | — | — | — | — | — | — |
| MA | 72 | 72.73 | 15 | 15.15 | 12 | 12.12 | 99 | 1.14 |
| Northeast | 577 | 78.40 | 76 | 10.32 | 83 | 11.28 | 736 | 4.81 |
| PI | 53 | 77.94 | — | — | 15 | 22.06 | 68 | 3.09 |
| CE | 256 | 88.58 | 11 | 3.81 | 22 | 7.61 | 289 | 7.18 |
| RN | 52 | 74.28 | 09 | 12.86 | 09 | 12.86 | 70 | 26.92 |
| PB | 26 | 63.41 | 05 | 12.20 | 10 | 24.39 | 41 | 5.99 |
| PE | 86 | 60.99 | 41 | 29.08 | 14 | 9.93 | 141 | 3.77 |
| AL | — | — | — | — | — | — | — | — |
| SE | 21 | 87.50 | — | — | 03 | 12.50 | 24 | 2.89 |
| BA | 83 | 80.58 | 10 | 9.71 | 10 | 9.71 | 103 | 3.08 |
| Southeast | 4 506 | 77.93 | 708 | 12.25 | 568 | 9.82 | 5 782 | 5.98 |
| MG | 1 388 | 69.47 | 336 | 16.82 | 274 | 13.71 | 1 998 | 5.79 |
| ES | 198 | 68.99 | 50 | 17.42 | 39 | 13.59 | 287 | 4.06 |
| RJ | 1 161 | 81.02 | 143 | 9.98 | 129 | 9.00 | 1 433 | 8.62 |
| SP | 1 759 | 85.22 | 179 | 8.67 | 126 | 6.11 | 2 064 | 5.36 |
| South | 567 | 84.38 | 49 | 7.29 | 56 | 8.33 | 672 | 2.48 |
| PR | 306 | 85.00 | 26 | 7.22 | 28 | 7.78 | 360 | 1.68 |
| SC | 105 | 84.00 | 06 | 4.80 | 14 | 11.20 | 125 | 5.45 |
| RS | 156 | 83.42 | 17 | 9.09 | 14 | 7.49 | 187 | 5.40 |
| Central-West | 539 | 80.09 | 54 | 8.02 | 80 | 11.89 | 673 | 3.52 |
| RO | 27 | 33.33 | 12 | 14.82 | 42 | 51.85 | 81 | 5.04 |
| MT | 108 | 87.10 | 02 | 1.61 | 14 | 11.29 | 124 | 4.05 |
| MS | 59 | 89.39 | 02 | 3.03 | 05 | 7.58 | 66 | 2.62 |
| GO | 345 | 85.82 | 38 | 9.45 | 19 | 4.73 | 402 | 3.83 |
| DF | — | — | — | — | — | — | — | — |

Source: MS/SNABS/DNDS/SE

TABLE XVIII — *Hanseniasis - Prevalence* – Brazil 1982.

| | AREA | % AREA | G. POP.* | % POP. | INHAB. km² | SICK POP. | % S. P.** | PATIENT km² |
|---|---|---|---|---|---|---|---|---|
| BRAZIL | 8 511 965 | 100.00 | 126 806 000 | 100.00 | 14.90 | 198 700 | 100.0 | 14.90 |
| AMAZÓNIA | 3 666 799 | 43.07 | 10 264 000 | 8.1 | 2.80 | 40 553 | 20.4 | 0.01 |
| NORTHEAST | 1 219 983 | 14.34 | 32 566 000 | 25.7 | 26.69 | 15 315 | 7.7 | 0.01 |
| SOUTHEAST | 924 935 | 10.86 | 55 294 000 | 43.6 | 59.78 | 96 630 | 48.7 | 0.10 |
| SOUTH | 577 723 | 6.79 | 19 797 000 | 15.6 | 37.27 | 27 095 | 13.6 | 0.05 |
| CENTRAL WEST | 2 122 499 | 24.94 | 8 885 000 | 7.0 | 4.18 | 19 107 | 9.6 | 0.01 |

* General population.
** Sick population.

TABLE XIX — Brazil 1982.

| REGION | BRAZIL | AMAZÓNIA | NORTHEAST | SOUTHEAST | SOUTH | C. WEST |
|---|---|---|---|---|---|---|
| Area Total | 8 511 965 | 3 666 799 | 1 219 983 | 924 935 | 577 723 | 2 122 499 |
| Area % | 100.00 | 43.07 | 14.34 | 10.66 | 6.79 | 24.94 |
| Pop. Total | 126 806 000 | 10 264 000 | 32 566 000 | 55 294 000 | 17 797 000 | 8 885 000 |
| Pop. % | 100.00 | 8.10 | 25.70 | 43.60 | 15.60 | 7.00 |
| Inhabit/Km² | 14.90 | 2.80 | 26.69 | 59.78 | 37.27 | 4.18 |
| * Migration | | 305 713 | – 5 464 696 | 2 890 946 | 7 683 | 2 260 354 |

Source: IBGE

* Data referring to 1980.

TABLE XX — *Hanseniasis - Historical Series of New Cases Detected in Brazil 1946/1982.*

| YEAR | CLINICAL FORMS | | | | | | NUMBER OF DETECTED NEW CASES | RATE PER 100 000 INHABITANTS |
|---|---|---|---|---|---|---|---|---|
| | V + D | | I | | T | | | |
| | Nº | % | Nº | % | Nº | % | | |
| 1946 | 2 376 | 62.31 | 789 | 20.69 | 648 | 17.00 | 3 813 | 8.01 |
| 1947 | 2 553 | 62.33 | 813 | 19.85 | 730 | 17.82 | 4 096 | 8.42 |
| 1948 | 2 775 | 61.53 | 925 | 20.51 | 810 | 17.96 | 4 510 | 9.07 |
| 1949 | 3 111 | 63.55 | 1 041 | 21.27 | 743 | 15.18 | 4 895 | 9.63 |
| 1950 | 3 008 | 63.74 | 925 | 19.60 | 786 | 16.66 | 4 719 | 9.08 |
| 1951 | 3 116 | 61.72 | 997 | 19.75 | 936 | 18.53 | 5 049 | 9.40 |
| 1952 | 3 067 | 59.40 | 1 081 | 20.94 | 1 015 | 19.66 | 5 163 | 9.27 |
| 1953 | 3 176 | 58.88 | 1 130 | 20.95 | 1 088 | 20.17 | 5 394 | 9.37 |
| 1954 | 3 121 | 58.68 | 1 079 | 20.29 | 1 119 | 21.03 | 5 319 | 8.94 |
| 1955 | 3 269 | 56.75 | 1 164 | 20.21 | 1 327 | 23.04 | 5 760 | 9.39 |
| 1956 | 3 431 | 55.43 | 1 367 | 22.08 | 1 392 | 22.49 | 6 190 | 9.79 |
| 1957 | 3 640 | 51.43 | 1 810 | 25.58 | 1 627 | 22.99 | 7 077 | 10.87 |
| 1958 | 3 441 | 48.27 | 1 845 | 25.88 | 1 843 | 25.85 | 7 129 | 10.64 |
| 1959 | 3 720 | 49.81 | 2 005 | 26.85 | 1 743 | 23.34 | 7 468 | 10.90 |
| 1960 | 3 257 | 48.17 | 1 963 | 29.03 | 1 542 | 22.80 | 6 762 | 9.61 |
| 1961 | 2 868 | 46.54 | 1 833 | 29.74 | 1 462 | 23.72 | 6 163 | 8.51 |
| 1962 | 2 748 | 49.58 | 1 621 | 29.25 | 1 173 | 21.17 | 5 542 | 7.43 |
| 1963 | 2 721 | 47.37 | 1 684 | 29.32 | 1 339 | 23.31 | 5 744 | 7.49 |
| 1964 | 2 778 | 49.54 | 1 457 | 25.98 | 1 353 | 24.48 | 5 588 | 7.08 |
| 1965 | 3 034 | 51.61 | 1 453 | 24.72 | 1 392 | 23.67 | 5 879 | 7.25 |
| 1966 | 2 472 | 51.49 | 1 246 | 25.95 | 1 083 | 22.56 | 4 801 | 5.76 |
| 1967 | 2 788 | 51.26 | 1 479 | 27.19 | 1 172 | 21.55 | 5 439 | 6.35 |
| 1968 | 2 773 | 49.80 | 1 499 | 26.92 | 1 296 | 23.28 | 5 568 | 6.33 |
| 1969 | 2 771 | 49.32 | 1 489 | 26.50 | 1 358 | 24.18 | 5 618 | 6.22 |
| 1970 | 2 811 | 51.39 | 1 456 | 26.62 | 1 203 | 22.99 | 5 470 | 5.88 |
| 1971 | 3 037 | 51.04 | 1 406 | 23.63 | 1 507 | 25.33 | 5 950 | 6.22 |
| 1972 | 3 285 | 51.24 | 1 652 | 25.77 | 1 474 | 22.99 | 6 411 | 6.52 |
| 1973 | 3 374 | 49.39 | 1 776 | 26.00 | 1 681 | 24.61 | 6 831 | 6.75 |
| 1974 | 3 991 | 48.68 | 2 288 | 27.91 | 1 920 | 23.41 | 8 199 | 7.87 |
| 1975 | 4 532 | 48.73 | 2 419 | 26.01 | 2 349 | 25.26 | 9 300 | 8.68 |
| 1976 | 4 439 | 46.02 | 2 552 | 26.45 | 2 656 | 27.53 | 9 647 | 8.94 |
| 1977 | 4 448 | 46.62 | 2 362 | 24.77 | 2 729 | 28.61 | 9 539 | 8.62 |
| 1978 | 5 390 | 44.95 | 3 419 | 28.51 | 3 184 | 26.54 | 11 993 | 10.58 |
| 1979 | 6 798 | 47.29 | 3 553 | 24.72 | 4 024 | 27.99 | 14 375 | 12.37 |
| 1980 | 6 354 | 43.78 | 3 708 | 25.54 | 4 453 | 30.68 | 14 515 | 12.19 |
| 1981 | 7 597 | 44.79 | 4 321 | 25.48 | 5 040 | 29.72 | 16 959 | 13.67 |
| 1982 | 7 630 | 44.90 | 4 418 | 26.00 | 4 939 | 29.06 | 16 994 | 13.40 |
| TOTAL | 135.700 | 50,28 | 68.025 | 25,20 | 66.136 | 24,50 | 269.861 | |

HANSENIASIS

RATE OF NEW CASES DETECTED PER 100,000 INHABITANTS
BRAZIL 1946-1982

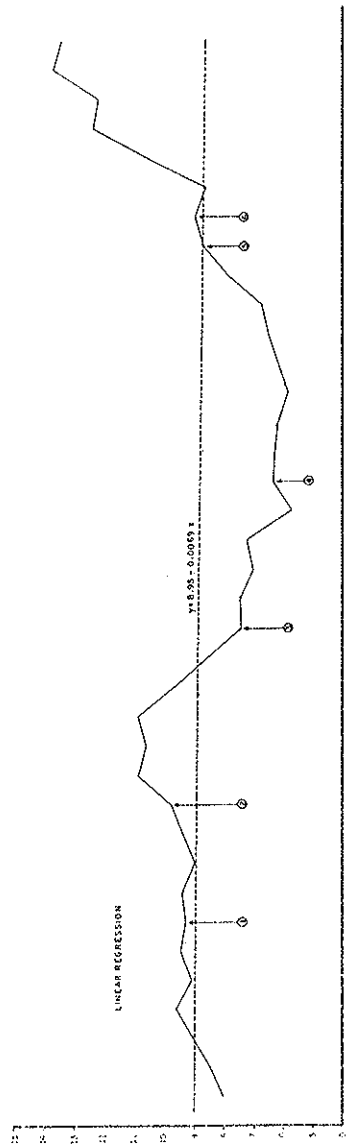



FIG. 8

HANSENIASIS

NEW CASES DETECTED: RATE PER 100,000 INHABITANTS
BRAZIL

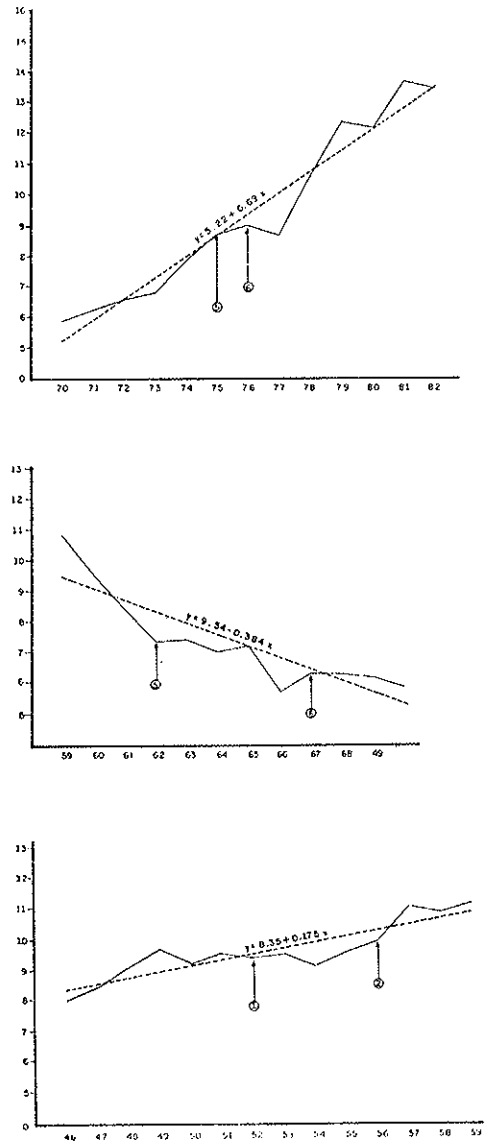



FIG. 9

HANSENIASIS

NEW CASES DETECTED: RATE PER 100,000 INHABITANTS
BRAZIL

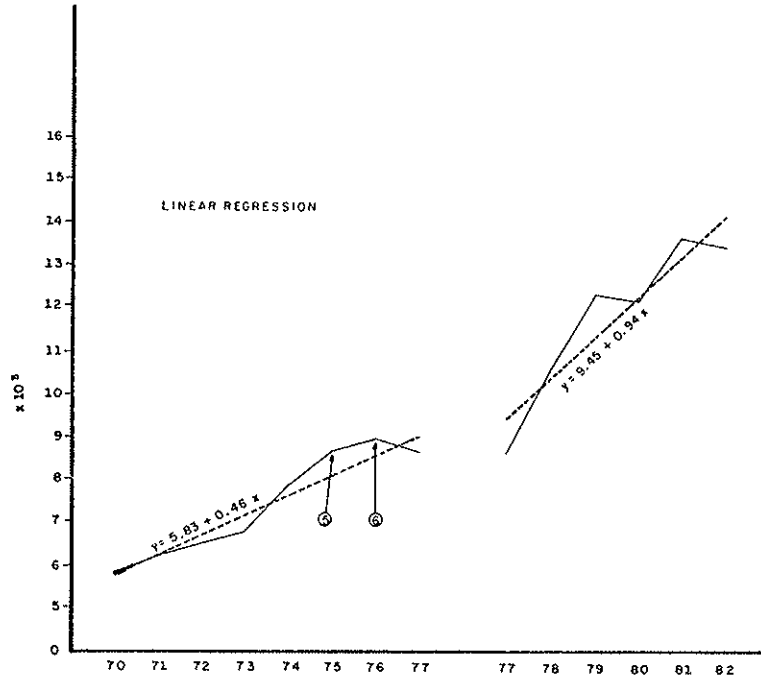



FIG. 10

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