



THE GLOBAL COMMISSION
FOR CERTIFICATION OF
SMALLPOX ERADICATION



STATUS REPORT ON THE PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

The country is situated in the south western part of the Arabian peninsula. It achieved its independence on 30 November 1967. It is bounded to the north by the Yemen Arab Republic and Saudi Arabia, to the east by Oman and to the south by the Gulf of Aden and the Arabian Sea. It includes the island of Perim lying in Bab-El Mandab and the island of Socotra lying in the Arabian Sea to the east of the Horn of Africa (Map - Figure 1)

A. Basic Demographic Data (Tables 1 and 2)

1. Population 1 590 275 (1973 census) 47.8 per cent under 15 years (Figure 2)
2. Area 332 970 sq. km.
3. Population density: Average 5/Km² (range 1 - 42)
4. Urban population: 33.2 per cent (Figure 3)
5. Rural population: 56.9 per cent
6. Nomadic population: 9.8 per cent
7. Total number of towns and villages (See Table 3): 2358 villages + capitals of districts and sub-districts
8. Population not easily accessible and not properly covered by smallpox surveillance: none

B. Administrative Units

1. Governorates: Six, each identified by a number
2. Districts: 3 - 5 in each governorate, number = 25 + Thamud = 26
3. Sub-districts: 2 - 6 per district Total = 83

Islands belong administratively to the first governorate.

C. Health System (Table 4)

1. General hospitals: 25 + 1 infectious disease hospital.
2. Health centres with beds: (15) in smaller urban centres.
3. Health units (263) in rural areas.
4. Mobile units (6) in nomadic areas.

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D. Reporting System for Notifiable Communicable Diseases

1. Immediate Notification: Quarantinable diseases are immediately notified to the Ministry of Health through governorate health departments. 295 reporting units exist throughout the country. Reports are sent by cable or telephone or sometimes by mail.

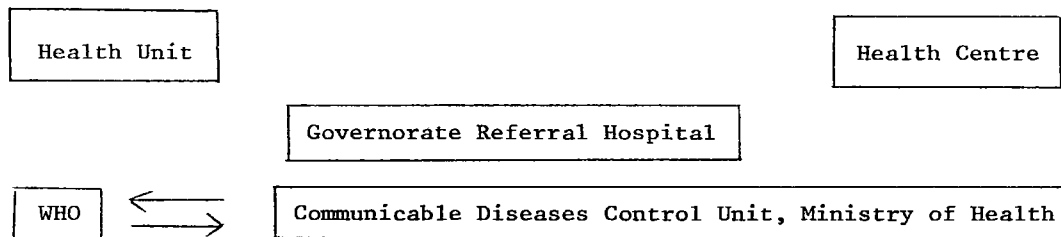
2. Regular reporting:

2.1 General hospitals report weekly on 20 infectious diseases including chickenpox. Two copies are filled by each hospital, one is forwarded to the permanent secretary and the other to the statistical section in the Ministry of Health.

2.2 Health centres and smaller units report monthly to the statistical section of the Ministry of Health. Chickenpox is not notifiable at this level.

Regularity of reporting is affected by the difficulty of transport.

The following diagram describes three levels through which notification of communicable diseases flows:



Local level at the periphery where health units and health centres exist.

Intermediate level: at governorates

Central level: at the Ministry of Health (some diseases are notified to WHO)

3. Action Taken if a Suspected Case of Smallpox was Reported: The department of preventive medicine in the Ministry of Health is notified and a team from the smallpox eradication programme is mobilized. The case is isolated. Diagnosis is verified by a team supervisor, mostly joined with the programme director. Contacts are vaccinated and a sample is collected. The area is searched for any suspects.

E. Smallpox Data

1. Cases and deaths reported from 1923 - 1978 (see Table 5 and Figure 4). Total cases reported was 1117 with 292 deaths. The epidemic curve as presented indicates that P.D.R.Y. was not endemic to smallpox. Importations were documented continuously from 1957 - 1961. Major epidemic years showed case fatality rates on the lower side for some years (0 - 2.%) consistent with variola minor type and higher case fatality rates for others (28 - 38.5%) indicating variola major.

2. The last major epidemic occurred in the period from 1957 - 1960 when 340 cases with 105 deaths were recorded. It was mainly due to importations through pilgrims in transit arriving from Pakistan via eastern borders of the country and through returning citizens arriving from Saudi Arabia via Yemen Arab Republic. Variolation was also documented to spread infection in some localities during 1958. Local spread was mainly confined to the western part of the country in the first four governorates. Local spread appears to have been interrupted since 1960.

3. The last smallpox outbreak or focus recorded was an imported case on board a ship which arrived from Bombay in the port of Aden on 18 February, where it docked with one case of smallpox which was detected and isolated on 21 February 1961. No local spread occurred. No further details exist about the actions taken (WER 1961).

The 1968 case recorded from Aden town is said to have been typical chickenpox from which a sample was collected and laboratory results were negative. No records are available at Aden to substantiate. Extensive tracing via Geneva Smallpox Unit has not yet led to information on this sample.

4. No records are available on suspected smallpox cases since the last outbreak.

F. Smallpox Vaccination Data (Table 6)

1. From 1950 - 1969 (data incomplete): 570 144 vaccinations were recorded in traceable records. At least double this number were performed. Intensive vaccination was done around outbreaks, (perifocal) and along main roads and border localities (blockade vaccination). The objective stated in 1958 was to vaccinate 80% of the population and achieve eradication by 1961. Vaccinations were performed during this period through local health services by health assistants, through voluntary vaccinators and specially recruited vaccinators during epidemics.

2. From 1970 - 1978: Vaccination was mainly done by the Smallpox Eradication Programme vaccinators who recorded 1 703 941 primary and secondary vaccinations.

3. Vaccination coverage assessment (1978): Returns from the Smallpox Eradication Team conducting the surveillance operation for certification showed that the percentage found with a vaccination scar ranged from 78.2 percent in the fifth governorate to 92.8 percent in the third governorate (see table 7).

G. Chickenpox Data

1. One hundred and sixty-three cases were reported for the period from January 1977 - June 1977. No deaths due to chickenpox are known to have been reported.

H. Laboratory Data

1. Records show a total of 15 samples collected (up to September 1978). The distribution according to governorates is shown in table 7.

I. Plan of Action for Certification

The following activities were undertaken for preparation of certification:

1. Activation of reporting through health establishments: all health establishments were instructed by the Ministry of Health to report monthly to the Smallpox Eradication Programme at Aden about the presence or absence of smallpox suspects and deaths from chickenpox. The units were also informed about the reward. Forms for this purpose together with smallpox posters were distributed to all health establishments throughout the country.

2. Visits to primary schools all over the country: During summer, vaccination teams visited the largest village near each closed school. In the last week of September search teams started visiting all primary schools throughout the country, searching for facial pockmarks among students and enquiring about any suspected cases in the area.

3. Active search by mobile teams: International border areas, coastal areas and previously infected areas were visited by mobile teams consisting of 32 searchers with 4 team leaders and a senior supervisor. They searched for any suspected smallpox cases and conducted facial pockmark surveys in priority areas. Teams were trained to record results on special forms.

4. Specimen collection is being emphasized through search teams.

5. The reward for reporting smallpox (local reward and global reward) is being publicized through newspapers, TV, radio and searchers. Arrangement was also made to pass the message through "imams" (religious leaders) to the people all over the country.

6. A WHO epidemiologist was assigned to assist in the process of certification for a period of 3 months which was completed by the end of July. A second visit was made during September and October.

J. Result of Activities: (February - September 1978)

1. A total of 342 villages, mostly in priority areas, were searched in the governorates. A total of 115 374 persons were contacted and screened for vaccination scars and for facial pockmarks. Their vaccination status ranged from 78.2 percent to 92.8 percent. One hundred and twenty-four persons were found with facial pockmarks. The date of latest infection is shown for each governorate (table 7).

2. Sixty-six primary schools were visited covering 28 312 students. None of them had facial pockmarks. Posters were placed in all schools and the students were informed about the reward for reporting.

3. Twenty-five rumours were investigated, but none proved to be smallpox. Fifteen specimens were collected; the results received for 12 were negative. The results are not yet in for the remaining three. Sample collection is further emphasized.

4. Health institutions started reporting; 76 Nil reports were received during August 1978. Teams are visiting health institutions and collecting the reports during their search.

5. Assessment was initiated on 1 October; results will be reported in due course.

6. The search operation may be completed by the end of December 1978, two months earlier than scheduled.

TABLE 1. BASIC DEMOGRAPHIC DATA FOR DEMOCRATIC YEMEN
ACCORDING TO 1973 CENSUS¹

GOVERNORATE	POPULATION		A R E A		DENSITY KM ²	PERCENTAGE DISTRIBUTION OF POPULATION		
	Number	% of Total	KM ²	% of Total		URBAN	RURAL	NOMADS
First	291 376	18.3	6 899	2.0	42	81.8	11.3	6.9
Second	273 611	17.2	12 618	3.8	22	9.0	87.1	3.9
Third	311 142	19.6	21 240	6.4	15	15.0	77.3	7.7
Fourth	161 966	10.2	73 053	22.0	2	16.6	72.6	10.8
Fifth	450 657	28.3	84 458	25.4	5	37.9	56.4	5.7
Sixth	60 876	3.8	65 582	19.7	1	33.8	34.1	32.1
Thamud	40 647	2.6	69 120	20.7	1	2.9	1.0	96.1
T O T A L	1 590 275	100.0%	332 970	100.0%	5	33.2	56.9	9.8

¹
Central Statistical Office, P.D.R.Y., Aden.

TABLE 2. POPULATION BY AGE AND SEX AT 1973 CENSUS¹

Age (in years)	Both Sexes	Male	Female
Under 5	290 245	146 263	143 982
5 - 9	275 641	144 131	131 510
10 - 14	186 652	103 002	83 650
15 - 19	129 778	62 006	67 772
20 - 24	94 634	40 839	53 795
25 - 29	105 599	47 696	57 903
30 - 34	92 653	41 168	51 485
35 - 39	92 385	45 686	46 699
40 - 44	66 677	31 091	35 586
45 - 49	55 271	26 994	28 277
50 - 54	52 934	25 651	27 283
55 - 59	28 442	14 310	14 132
60 - 64	38 498	17 445	21 053
65 - 69	18 029	8 887	9 142
70 and over	47 652	21 739	25 913
Not stated	15 185	10 109	5 076
All ages	1 590 275	787 017	803 258

¹Central Statistical Office, Democratic Yemen

TABLE 3. MAIN ADMINISTRATIVE UNITS AND NUMBER OF VILLAGES^{*1}

Governorate	Number of subdivisions		Number of villages
	Muderiat(District) 1st level	Sub District 2nd level	
First	3	10	93
Second	3	13	683
Third	4	11	668
Fourth	4	15	343
Fifth	5	23	537
Sixth	4	8	32
Thamud	1	3	2
Total	24	83	2 358

* Villages or localities with a population less than 100 are not included

TABLE 4. HEALTH ESTABLISHMENTS IN DEMOCRATIC YEMEN²

GOVERNORATE	GENERAL HOSPITALS	M.C.H. CLINICS	HEALTH CENTRES (beds)	HEALTH UNITS	PEOPLE'S CLINICS	MOBILE UNITS
First	6	8	1	14	23	-
Second	5	6	1	51	-	1
Third	5	4	3	60	-	1
Fourth	3	1	2	51	-	2
Fifth	6	5	2	79	-	2
Sixth	1	1	-	8	15	-
Thamud Province	-	-	- -	-	-	-
T O T A L	26	25	15	263	38	6

¹Central Statistical Office, 1978.

²Ministry of Health, P.D.R.Y., Aden, 1978.

TABLE 5. SMALLPOX IN DEMOCRATIC YEMEN AS REPORTED FROM
1923 - 1978

YEAR	CASES	DEATHS	SOURCE
1923	43	6	*
1924	9	1	*
1925	16	5	*
1926	17	2	*
1927	7	2	*
1928	3	2	*
1929	410	158	*
1930	9	0	*
1931	1	0	*
1932	6	0	*
1933	4	2	*
1934	2	0	*
1935	3	0	*
1936 - 1938	0	0	*
1939	1	1	*
1940 - 1941	0	0	*
1942	2	1	*
1943	139	4	*
1944	15	1	*
1945	3	0	*
1946	3	2	*
1947	0	0	*
1948	2	0	*
1949	7	0	*
1950	4	0	*
1951	2	0	*
1952 - 1953	0	0	*
1954	66	0	*
1955	1	0	*
1956	0	0	-
1957	65	19	I
1958	192	54	I
1959	70	27	I
1960	13	5	I
1961	1		I
1962 - 1967	0	0	-
1968	1	0	?
1969 - 1978	0	0	-
T O T A L	1 117	292	

* = Documents for source not available for periods 1923 - 1955.

I = Importations

? = Unconfirmed case which occurred at Aden; said to have been chickenpox case.

TABLE 6. SMALLPOX VACCINATIONS PERFORMED IN P.D.R.Y. 1950 - 1977

(a) Vaccinations Performed from 1950 - 1969

Year	Infected Areas	Others	Total
1950 - 1955
1956	-	-	11 315
1957	80 690	71 599	152 249
1958	76 987	14 052	91 039
1959	26 398	67 853	94 251
1960	744	31 563	33 337
1961
1962	-	-	...
1963	-	-	31 923
1964	-	-	60 189
1965	-	-	72 437
1966	...	-	55 327
1967 - 1969	...	-	...
Total	184 819	185 067	570 144

... Reports not available
From 1956 - 1960 Aden colony not included

(b) Primary Vaccination and Revaccination Performed
by SME Teams 1970 - 1977

Year	Primary	Revaccination	Total
1970	80 078	222 224	302 202
1971	103 744	65 620	169 364
1972	18 961	226 667	245 628
1973	162 022	140 274	302 296
1974	116 122	65 155	181 277
1975	57 351	185 350	242 881
1976	32 768	105 735	138 503
1977	6 936	114 754	121 690
Total	557 982	1125 959	1703 941

Activities	Governorates						Total
	I	II	III	IV	V	VI	
1: Active locality search							
a) Localities or villages searched	22	137	69	72	32	10	342
b) Population contacted	35 285	16 936	24 164	15 315	21 790	1 884	115 374
c) Percentage with vaccination scar	87.0%	90.0%	92.8%	83.3%	78.2%	83.7%	
d) Number with facial pockmarks	2	31	10	48	29	4	124
e) Year of latest infection	(1944)+	(1966)+	(1965)+	1958	1942	1950	(1966)+
2: Primary school search							
a) Number of schools visited	43	12*	11*	-	-*	-	66
b) Number of students seen	21 205	2 335	4 772	-	-	-	28 312
c) Students with facial pockmarks	Nil	Nil	Nil	-	-	-	Nil
3. Reporting from health institutions (July 1978)	43	28	-	-	5	-	76
4. Rumours investigated	14	1	3	2	5	-	25
5. Samples collected	6	1	3	-	5	-	15

* Teams started a nation-wide facial pockmark survey to cover all primary schools.

()+ = infected outside the country.

TABLE 7. SUMMARY OF ACTIVITIES CONDUCTED FOR CERTIFICATION FROM FEBRUARY TO END OF SEPTEMBER 1978

PEOPLES' DEMOCRATIC REPUBLIC OF YEMEN

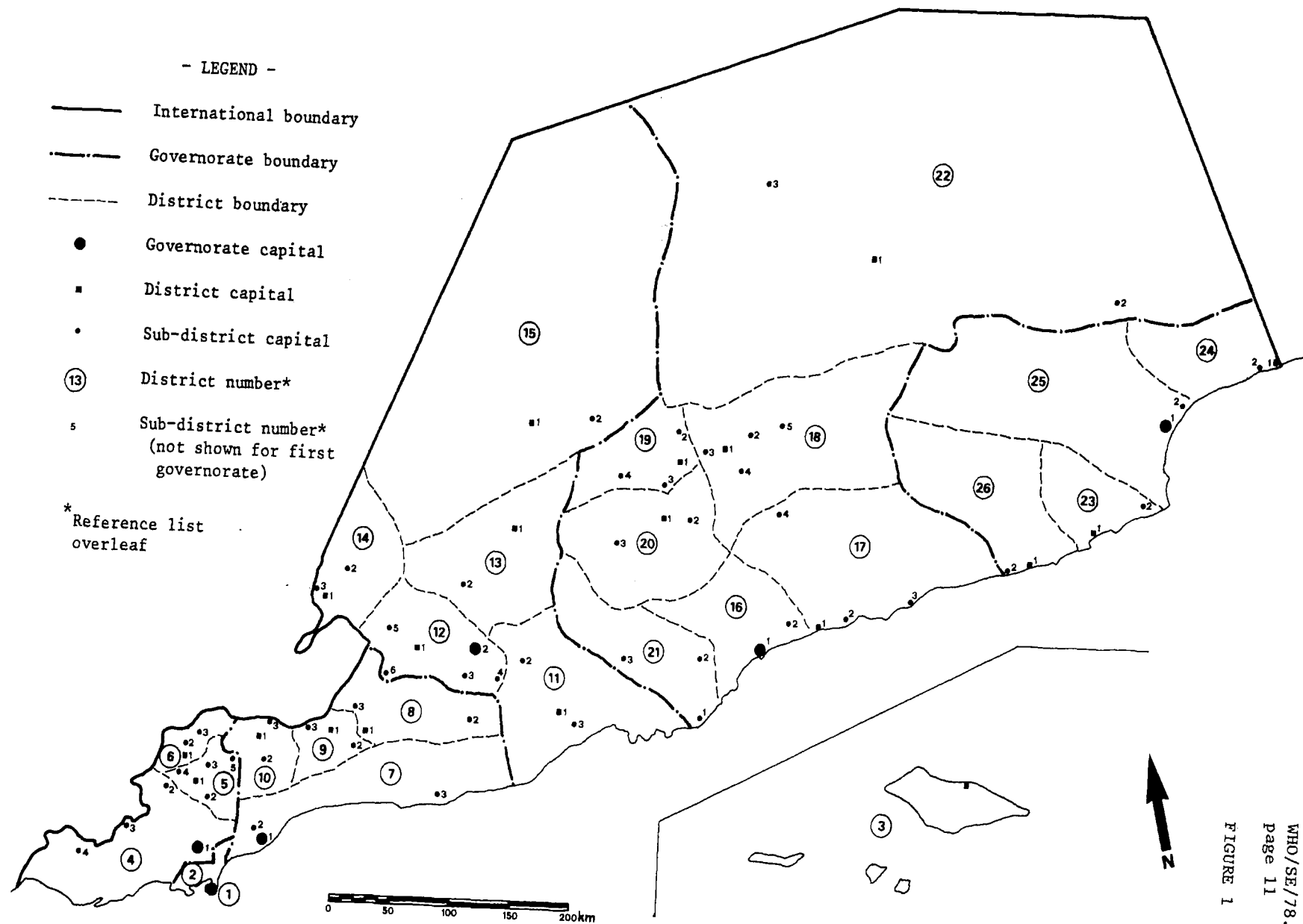


FIGURE 1

LIST OF DISTRICTS AND SUBDISTRICTS
REFERENCE FIGURE 1

- I Governorate
1. ADEN 1) Tawahi 2) Khormaksar 3) Crater 4) Maala
2. ELSHAAB 1) Sheik Othman 2) Darsaad 3) Elmansura 4) Little Aden
3. ISLANDS 1) Perim 2) Hadibu 3) Qalansiyah
- II Governorate
4. SOUTHERN 1) Al Hota 2) Musaymir 3) Tur Elbaha 4) Al Mudarbah
5. EASTERN 1) Al Habylin 2) Al Qashaa' 3) Habil Gabre 4) Dabab 5) Yahar
6. NORTHERN 1) Dhala 2) Khella 3) Awabel
- III Governorate
7. SOUTHERN 1) Zinjibar 2) Ja'ar 3) Ahwar
8. EASTERN 1) Mudia 2) Mahfid 3) Gishan
9. NORTHERN 1) Lawder 2) Al Wadih 3) Mukayras
10. WESTERN 1) Labaos 2) Rasad (Al Qara) 3) Alhad
- IV Governorate
11. SOUTHERN 1) Mayfa'ah 2) Rawdah 3) Radum
12. CENTRAL 1) Nisab 2) Ataq 3) Said 4) Habban 5) Khora 6) Hatib
13. EASTERN 1) Maafood 2) Ayad
14. NORTHERN 1) Nihan 2) Alwadi 3) Ain
15. AL ABR 1) Al Abre 2) Hajar Al Sayaar
- V Governorate
16. SOUTHERN 1) Mukalla 2) Ghayl Bawazir
17. EASTERN 1) Ash Shihr 2) Al Hami 3) Al Dis and Qusayir 4) Ghayl Bin Yaman
18. NORTHERN 1) Saywun 2) Tarim 3) Shibam 4) Sah 5) Al Sum
19. CENTRAL 1) Al Qotin 2) Wadisir 3) Hura 4) Wadi Rakhya
20. WESTERN 1) Sayf 2) Wadi Ain (Al Bowayre Qat) 3) Amd
21. AL THAWRA 1) As Sufal 2) Jul Bahu 3) Sadarah
22. THAMUD 1) Thamud 2) Shaypoot) 3) Hazar
- VI Governorate
23. SOUTHERN 1) Qishn 2) Husween
24. EASTERN 1) Hoof 2) Jadeb
25. CENTRAL 1) Al Ghaydah 2) Jarub
26. WESTERN 1) Sayhut 2) Al Ais

FIGURE 2

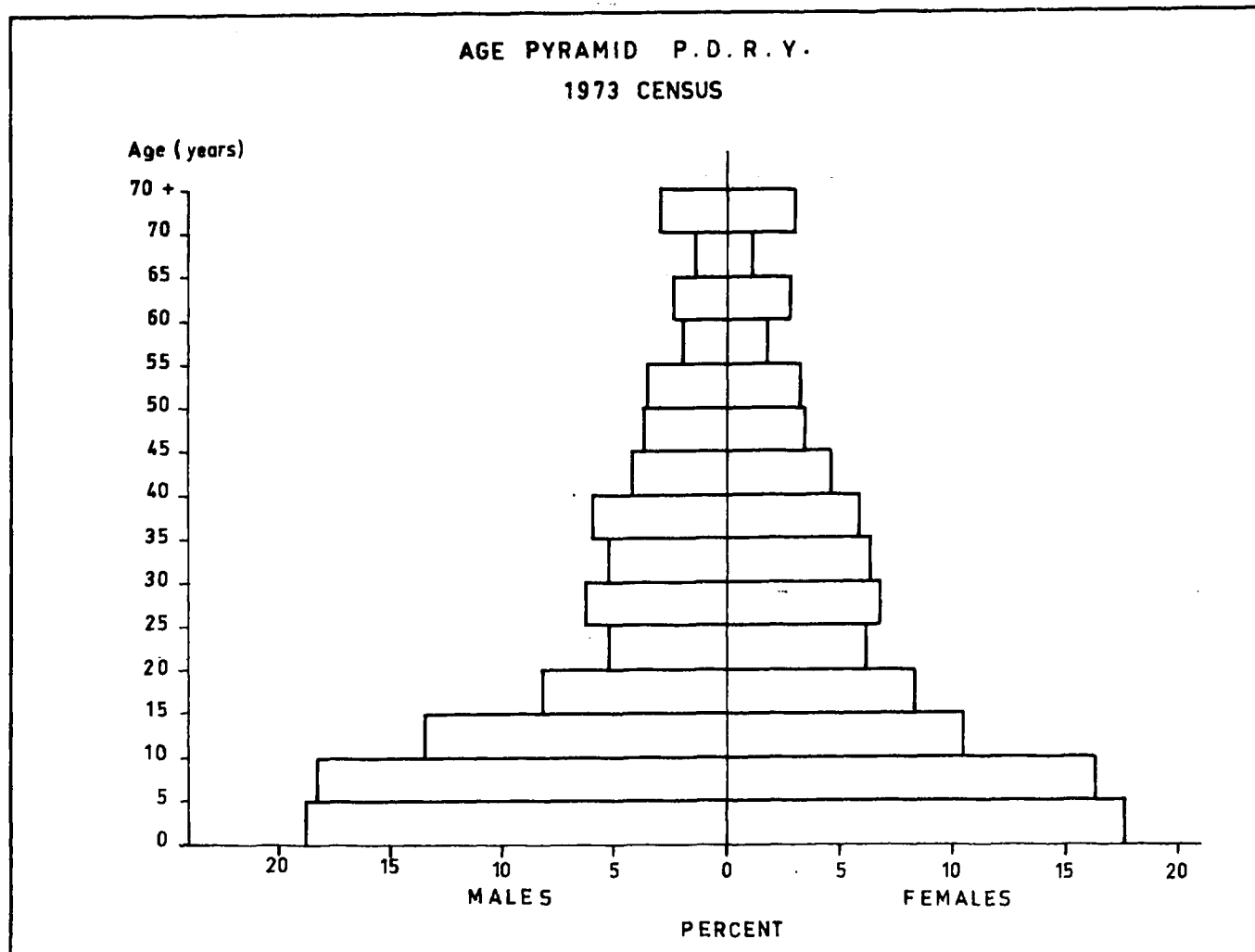


FIGURE 3

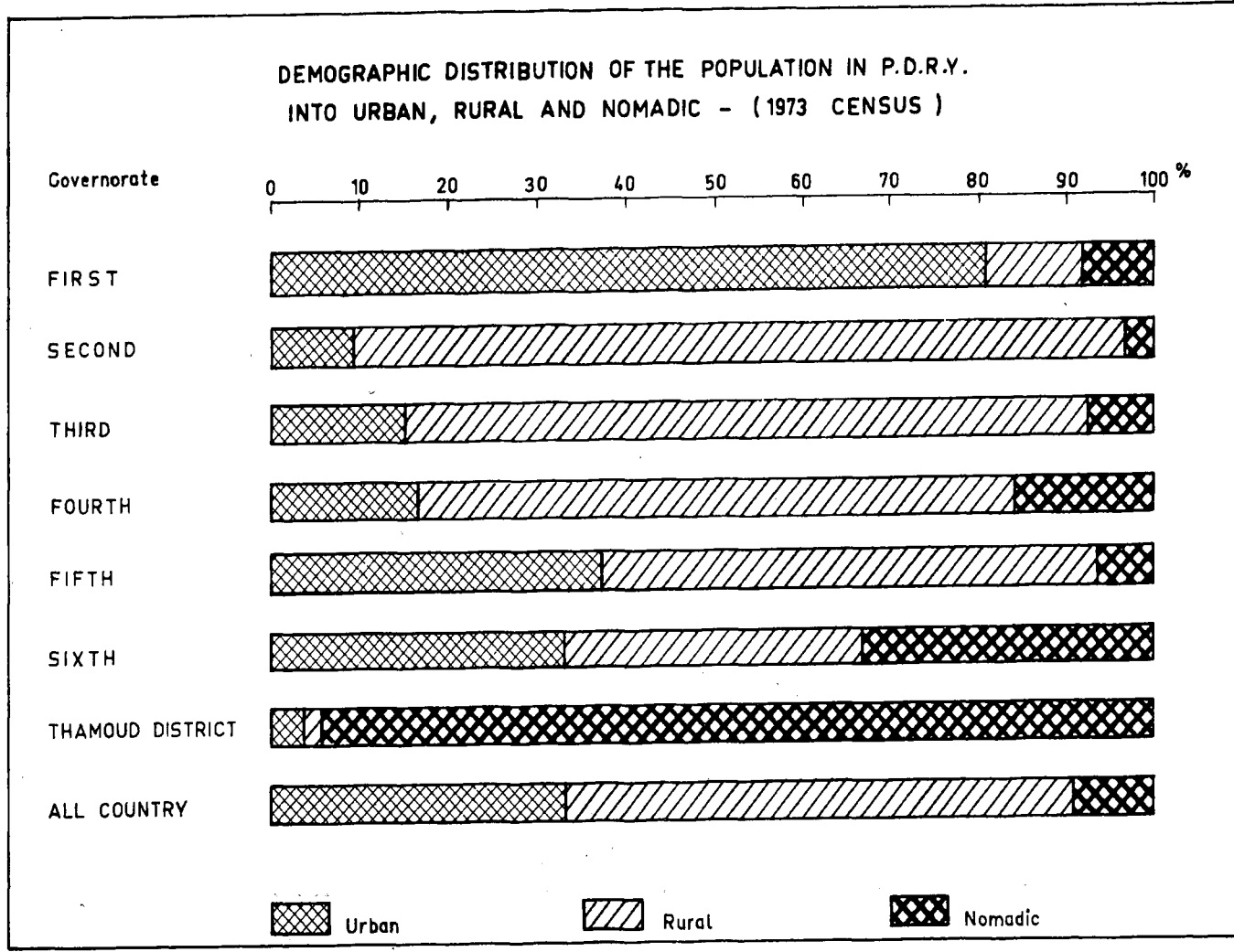
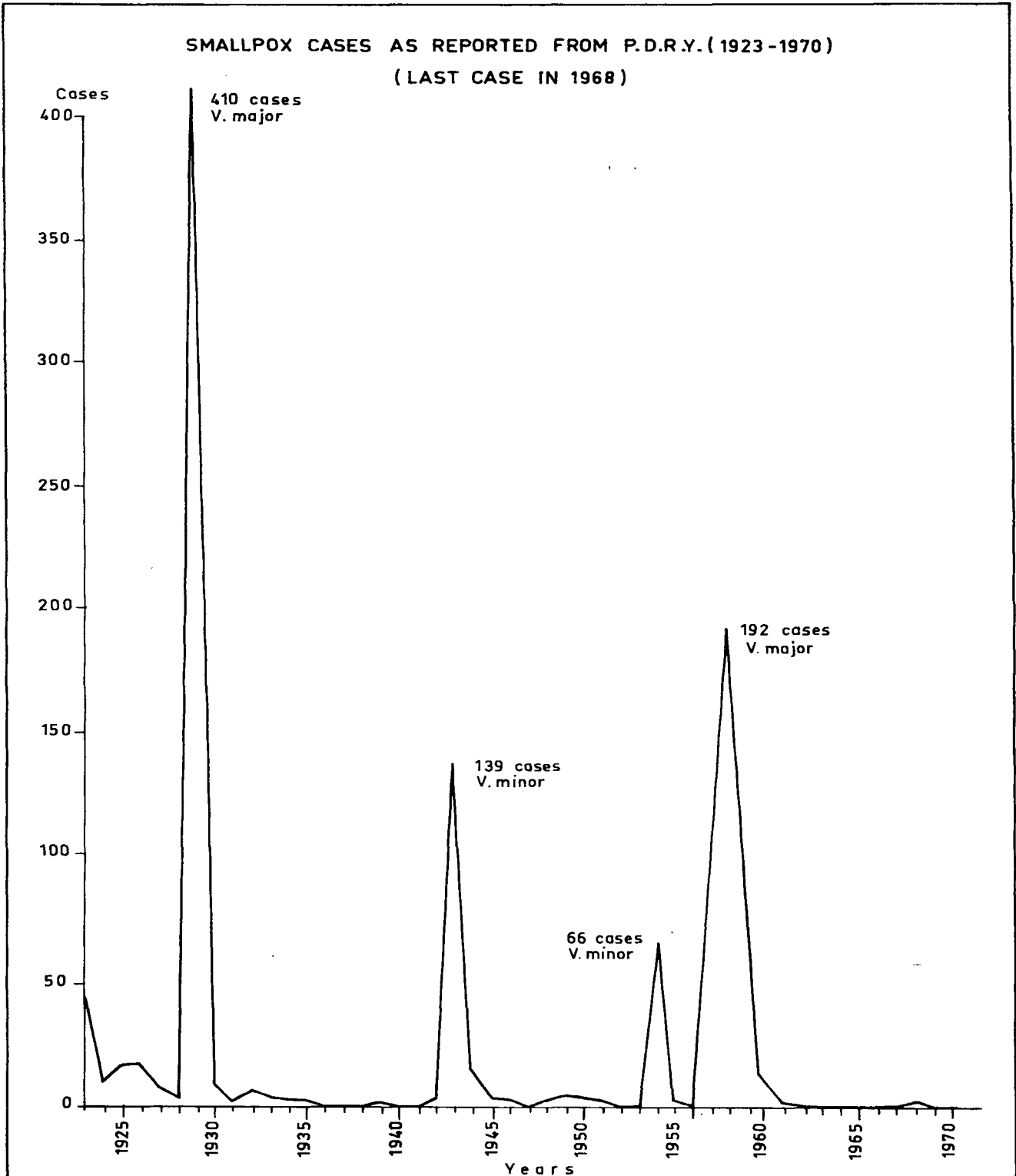


FIGURE 4



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