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TRAINING SEMINAR ON SMALLPOX ERADICATION

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THE SMALLPOX ERADICATION PROGRAMME IN AFGHANISTAN

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Afghanistan (Figure 1) is a land of mountains covering an area of about 270 000 square miles. The estimated population is 17 million including nearly three million nomads called 'kuchis'. The climate is dry with wide variations of temperature. There are frequent snow falls in winter but precipitation occurs mainly as summer rain. The roads are motorable to the main towns or centres of the provinces; however, access to remote places and villages, especially in the mountainous areas, is difficult. Administratively, the country is divided into 28 provinces; each province has a varying number of woleswalies (districts) and alaqadaries (sub-districts).

Smallpox has been prevalent in the country for centuries. In late 1968, the Government took a serious view of the problem and a plan of action for smallpox eradication was prepared. The "attack phase" of the programme was started in the Kandahar Zone and subsequently taken up in the other three zones as they were established.

By mid June 1972, the attack phase was completed in all zones and now the consolidation phase of the programme is in progress.

The following is a brief account of the operational achievements, the problems being encountered and the future plan of action.

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Vaccination Activities

Systematic mass vaccination of the population in the provinces was carried out, house by house, village by village and woleswali by woleswali. In each village the vaccination activity was preceded by health education of the people. The sequence in which the provinces were taken up for vaccination coverage depended upon various factors such as climatic, geographic, epidemiological and at times political.

The progress by year is indicated below and in Figure 2.

Year	No. of provinces covered	No. of vaccinations performed
1969	3	549 903
1970	9	3 541 643
1971	12	4 676 442
1972 (1 July)	4	1 713 237
	28	10 481 225

During the attack phase, the objective of which was to vaccinate the entire population, only about 10.5 million of the estimated 17 million persons, i.e. about 60%, were, in fact, vaccinated. The deficit is believed to be accounted for principally by a large number of the population being semi-nomads who were not available at the time of vaccination. The majority of the nearly three million nomads are yet to be covered.

Therefore, in the consolidation phase the principal objectives are the vaccination of those missed during the attack phase and of the nomads as well as the revaccination of all children of 0 to 14 years.

Assessment of the Vaccination Programme

From the inception of the programme, concurrent assessment of vaccination activities has been a regular feature in all zones. Specially trained teams performed scar surveys in a 10% random sample of the population in each woleswali between 7 and 21 days after the vaccination teams had been there.

This concurrent assessment revealed many lacunae in the vaccination programme such as negligent performance of some teams, missed villages, resistance to vaccination among some groups of the population, and poor vaccination technique. Wherever possible timely remedial measures were instituted.

According to the assessment results, an overall vaccination coverage of more than 90% had been achieved in all the provinces by the end of the attack phase. However, it is known that in certain provinces many villages have been missed, and the vaccination coverages of the 0 to 14 year age group has not been altogether satisfactory.

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To ensure a more thorough coverage during the consolidation phase, a new assessment form has been devised with the age group 0 to 4 years further sub-divided into single year age groups.

Surveillance and Containment Activities

When the programme began, there was no proper system for notifying cases. It was estimated that perhaps not more than one percent of the cases was being officially reported. Immediate measures were instituted to develop a nation-wide reporting network. The programme staff began by visiting all Provincial Medical Officers and all hospitals, Health Centres and other health installations, to explain to all concerned the importance of early reporting as well as the channels and means of reporting. Further, the assistance of malaria staff, the military, the police, private practitioners, governors and sub-governors in the various provinces and the village leaders was sought in an effort to obtain early information of smallpox outbreaks. By these efforts and by the immediate response of programme staff to any report received, the official notification of cases improved considerably but was by no means complete, as indicated by active surveillance which has been operative in all zones since September 1969.

Number of reported smallpox cases and number of additional cases discovered by the programme staff

Year	Cases reported	Additional cases found	Total
In 1970	191 (18%)	853 (82%)	1 044
In 1971	192 (26%)	544 (74%)	736
In 1972 (1 Oct)	75 (36%)	131 (64%)	206

If, instead of the number of cases, one considers the number of outbreaks reported through the various channels, the improvement in reporting becomes more obvious, as shown below:

Reported by	No. of outbreaks notified 1970	1971	1972 (1 Oct)
P.M.Os, Hospitals, Health Centres and Malaria Agents	51 (61%)	48 (45%)	24 (62%)
Local leaders	11 (13%)	13 (12%)	6 (15%)
Programme staff	21 (26%)	46 (43%)	9 (23%)
	83	107	39

However, in recent months, it has been discovered that a couple of outbreaks, though of long duration, were not reported by anyone. During the consolidation phase efforts will be continued to further strengthen the reporting system. It will be one of the main tasks of all programme personnel to stress the importance of early reporting to all concerned.

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Since early 1970 specially trained zonal teams have been dealing with every reported outbreak. The following table presents an analysis of the outbreaks according to their source of infection.

	No. of outbreaks		
Source of infection	1970	1971	1972 (1 Oct)
Importations	11 (13%)	13 (12%)	15 (39%)
Variolation	23 (28%)	21 (19%)	2 (5%)
Nomads	8 (10%)	4 (4%)	5 (13%)
Hospitals	5 (6%)	2 (2%)	- -
Kabul city (Urban reservoir of infection)	8 (10%)	4 (4%)	- -
Fellow travellers	3 (3%)	- -	- -
Endemic foci	5 (6%)	4 (4%)	- -
Contact with cases of earlier outbreaks	- -	47 (44%)	13 (33%)
Undetermined	20 (24%)	12 (11%)	4 (10%)
	83	107	39

As each and every report of a smallpox case from whatever source is investigated naturally a certain number of reports turned out to be false. The details of the false reports received during the years 1970, 1971 and 1972 (1 October) are shown below:

	No. of Instances		
Cases wrongly reported as smallpox	1970	1971	1972 (1 Oct)
Chickenpox	28 (44%)	53 (54%)	44 (71%)
Measles	11 (17%)	12 (13%)	7 (11%)
Skin infections	10 (16%)	18 (18%)	4 (7%)
nil cases	14 (23%)	15 (15%)	7 (11%)
Total:	63	98	62

	No. of Instances		
False reports received from	1970	1971	1972 (1 Oct)
Provincial Medical Officers	9 (14%)	5 (5%)	4 (6%)
Private Practitioners	- -	- -	10 (16%)
Basic Health Services staff	13 (20%)	13 (14%)	14 (23%)
Hospitals	1 (2%)	11 (11%)	- -
Local People	40 (64%)	64 (65%)	34 (55%)
Schools	- -	5 (5%)	- -
	63	98	62

During 1970 and 1971, a matter of concern had been the reservoir of infection in Kabul City and the manner in which local hospitals were facilitating the spread of smallpox. A special mopping-up cum surveillance team had to be deployed. The progress made is shown in Figure 3.

The main problems during recent months have been importations of smallpox from Pakistan and the still persistant variolation practice in some remote parts of the country. Thus during the consolidation phase, active surveillance will be intensified in the border provinces, and further efforts will be made to prohibit variolation by governmental pressure as well as by persuasion of programme staff.

When one examines the age and sex distribution and the variolation/vaccination status of the cases detected during 1970, 1971 and 1972, the following features come to light.

1. There has been no significant difference by sex in the incidence of cases.

2. Nearly 90% of the cases have occurred among the 0 to 14 year age group.

3. 10 - 30 per cent of the cases have been directly due to variolation.

4. Only 2 - 6 per cent of the cases occurred among the previously vaccinated.

Hence the specific objectives during the consolidation phase will be vaccination of children in the 0 to 14 year age group and of those missed during the attack phase.

Because of improved reporting, active surveillance, and better investigation of reported outbreaks and prompt containment measures, the endemic foci in the country have almost been eliminated (Figure 4). There has been both a gradual reduction in the size of the endemic area and a sustained decrease in the case incidence (Figure 5).

Prospects for achieving a nil incidence of smallpox this year seem bright. The thoroughness with which each case report is investigated and the application of adequate containment measures in every instance are of great importance from now on.

Training

Training has been a continuous activity. Besides the periodic courses conducted for supervisors in the programme, a vaccinator's training course was also undertaken. Additionally, in all zones, assessment and surveillance and containment teams were specifically trained in their functions. Constant efforts were and are being made to improve the performance of these teams.

Conclusion

The programme has made steady progress. For the attainment of success, importations of the infection from Pakistan and the still prevalent practice of variolation in the country seem to be the only impediments.

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Therefore, continued efforts will be made:

1) to strengthen the reporting system

2) to prohibit variolation

3) to intensify active surveillance to uncover possible residual foci of smallpox and to obtain early information of outbreaks due to importation of smallpox from neighbouring endemic countries

4) to continue systematic vaccination

Once the country becomes smallpox-free, it is intended to broaden the scope of the programme itself to include the administration of other antigens, particularly BCG, and surveillance of other diseases of national importance.

FIGURE 1

AFGHANISTAN

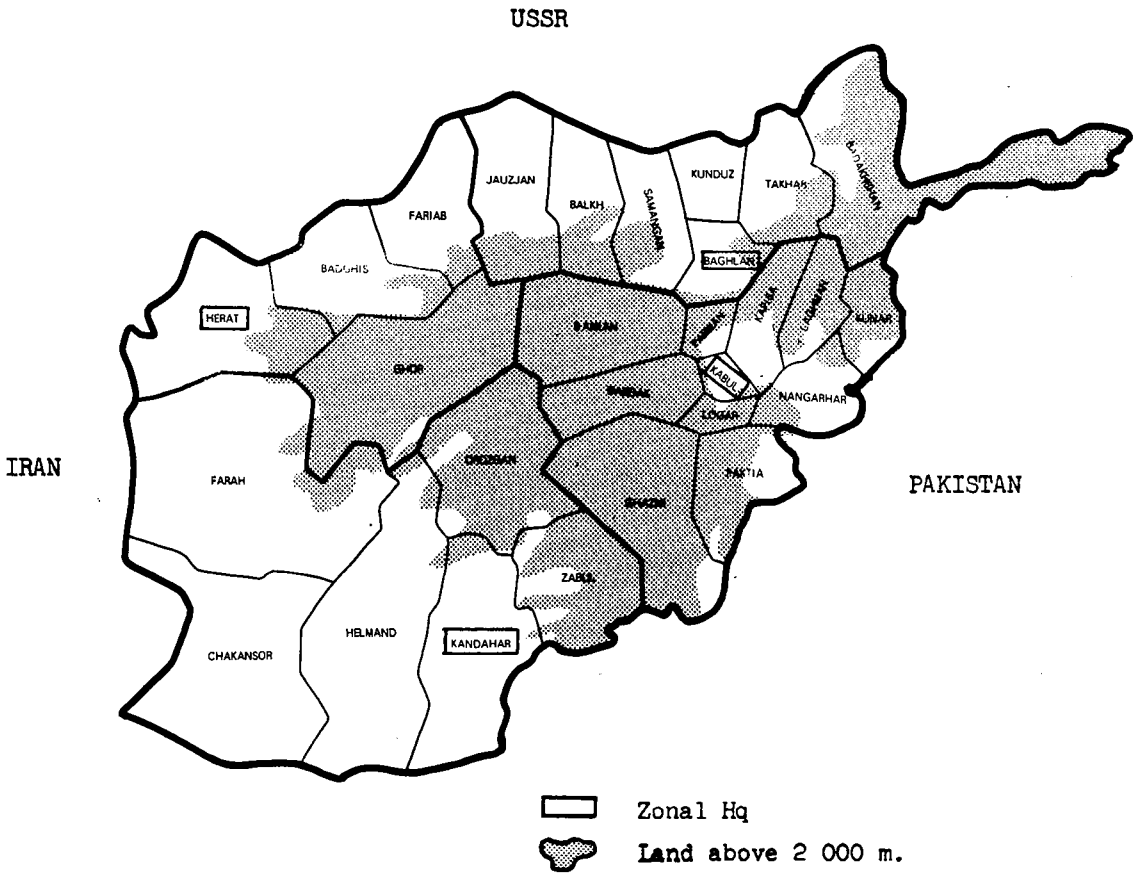

FIGURE 2

SMALLPOX VACCINATIONS DONE BY PROJECT STAFF

1969 - 1972 (1 Aug)

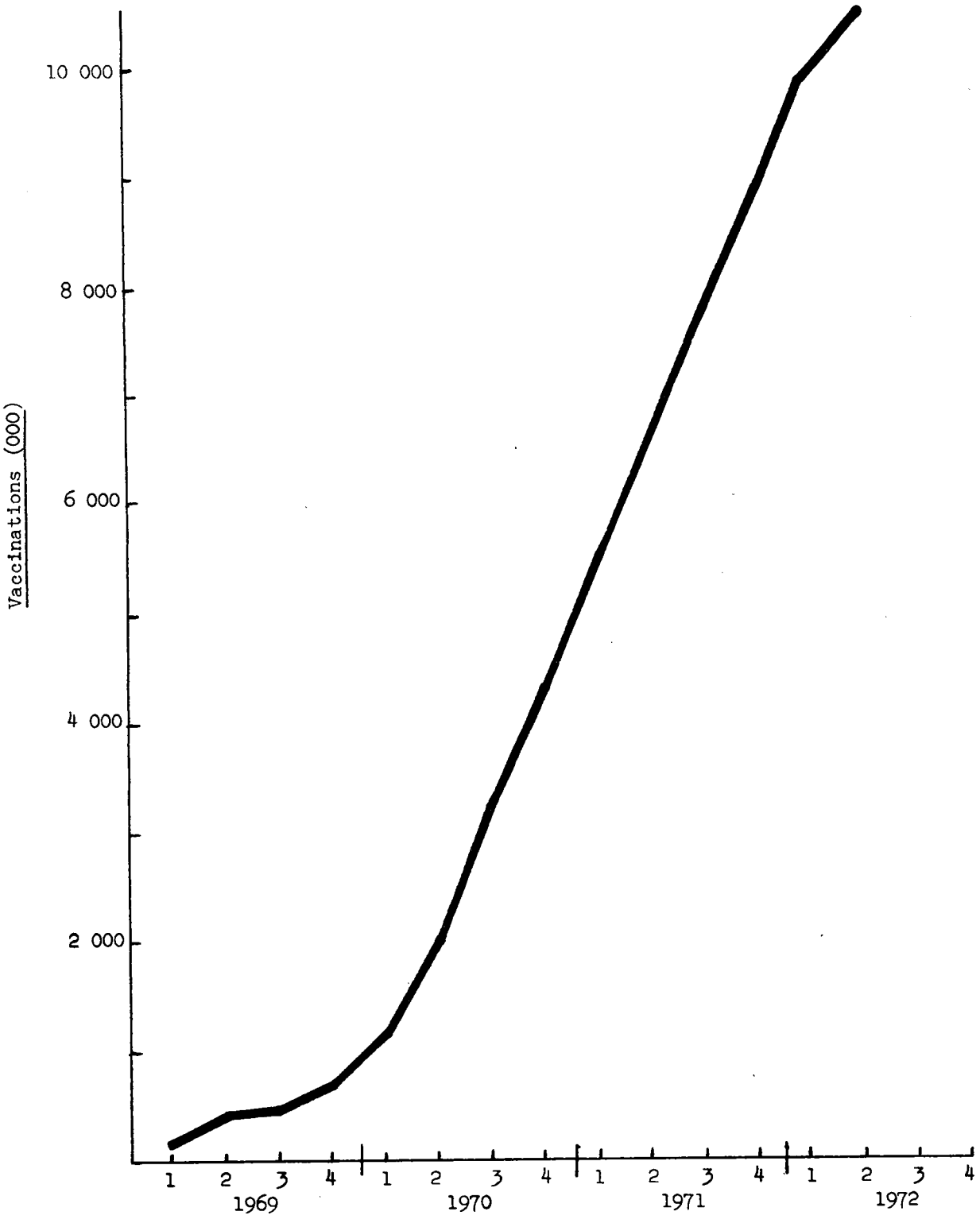

FIGURE 3

KABUL CITY, LOCATION OF SMALLPOX CASES

1970 - 1972

FIGURE 4

AFGHANISTAN, SMALLPOX CASES PER 100 000 INHABITANTS

1970 - 1972 (Sept)

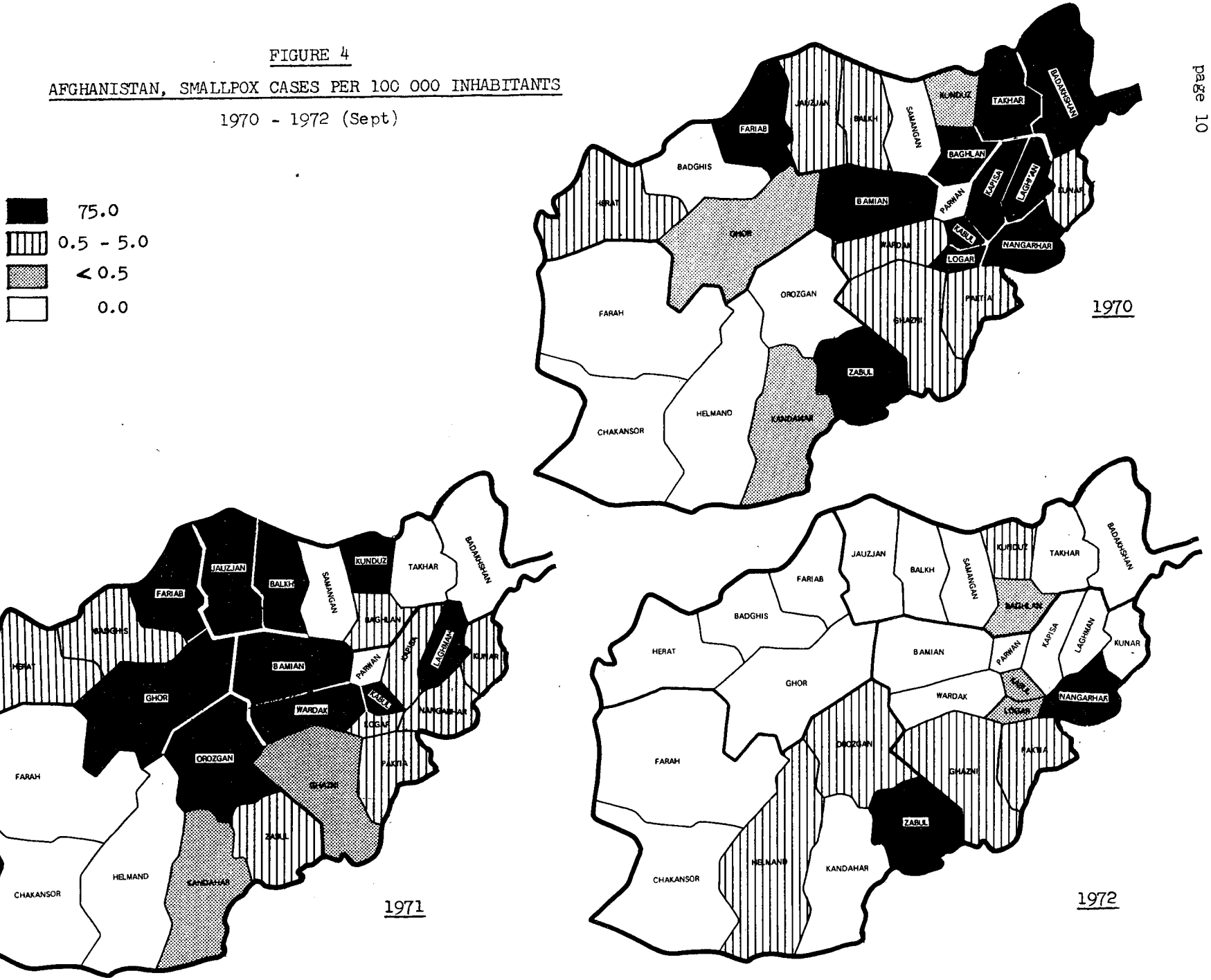

FIGURE 5

AFGHANISTAN, SMALLPOX INCIDENCE

1970 - 1972 (15 Aug)