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RESTRICTED

REPORT ON A VISIT

TO THE REPUBLIC OF SOUTH AFRICA

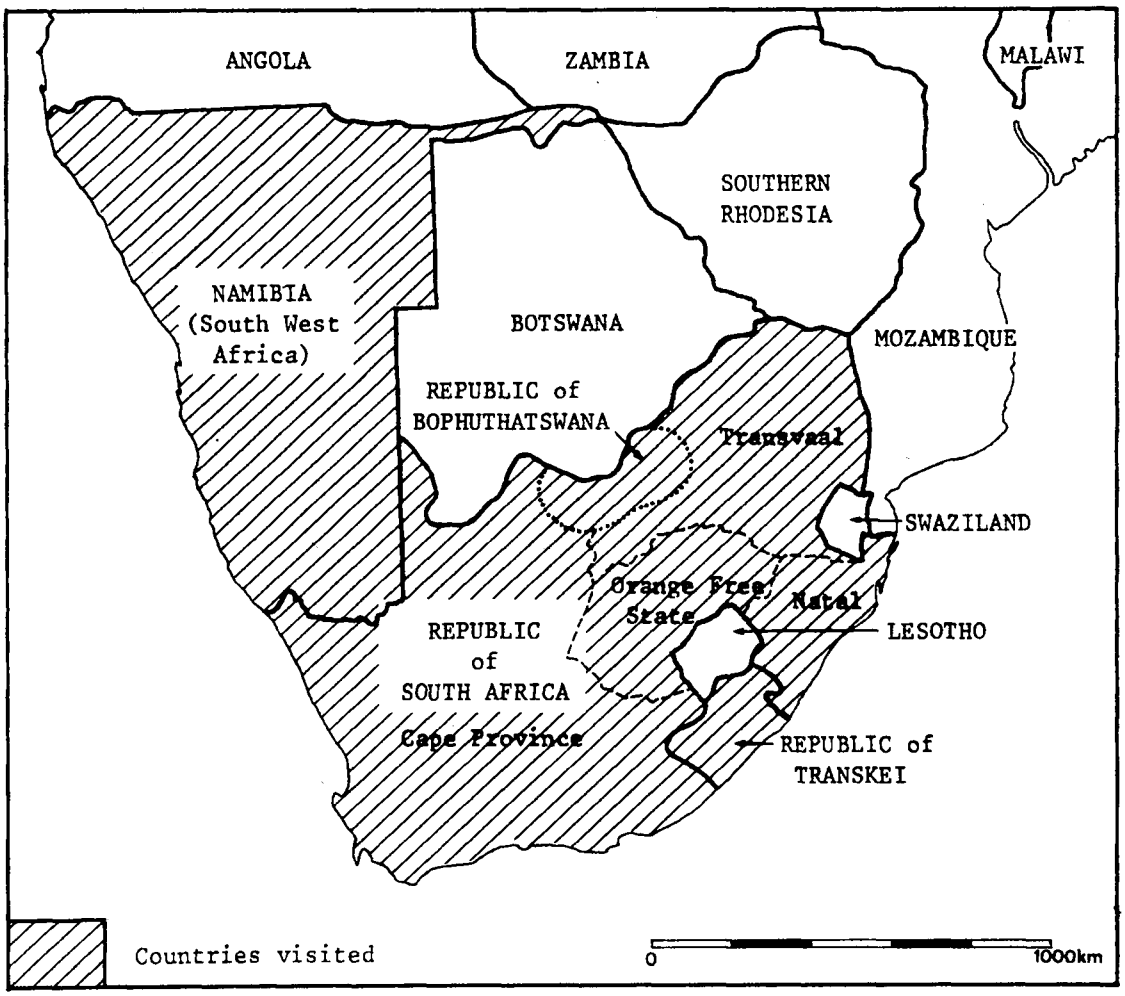
AND NAMIBIA/SOUTH WEST AFRICA

19 JANUARY TO 19 FEBRUARY 1978

BY

F. FENNER

COUNTRIES VISITED AND NEIGHBOURING COUNTRIES



1. OBJECTIVES

(a) to acquaint local health authorities of the need for and nature of "country" background and field survey reports on smallpox eradication.

(b) to arrange with appropriate authorities in the countries and homelands concerned for the conduct of chickenpox and facial pockmark/vaccination scar surveys.

(c) to visit enough of each country and homeland to become acquainted with political and administrative arrangements relevant to smallpox eradication and surveillance, the geography and demography of "vulnerable" areas, and the nature and quality of various echelons of preventive health services.

(d) to discuss smallpox vaccine production and distribution and the destruction or transfer of laboratory stocks of variola virus.

(e) to be in a position to discuss the "country reports" from South Africa and Namibia/South West Africa with the Global Commission in December 1978.

2. ITINERARY

A detailed annotated itinerary and maps of travel and of the countries and homelands involved are set out as Annex 1. Travel arrangements were decided after consultation with the State Health Department in Pretoria, bearing in mind:

(a) the political and administrative complexity of the area, in which there are separate but inter-related health administrations in the Republic of South Africa (RSA), Transkei, Bophuthatswana, Namibia/South West Africa and the seven Homelands,

(b) the regions where the last cases of smallpox occurred,

(c) the regions judged to be of highest risk (rural areas of high population; border areas with Botswana and Angola).

3. THE EVOLVING ORGANIZATION OF PREVENTIVE HEALTH ADMINISTRATION

Specific details will be provided in the country reports, but the following notes indicate my interpretation of past, current and future arrangements. According to the Government of RSA, four separate countries exist in the area: the Republic of South Africa (white areas and seven homelands), the independent countries of Transkei, Bophuthatswana and Namibia/South west Africa. The seven homelands not yet independent, Ciskei, Gazankulu, Kwazulu, Lebowa, Venda, Qwaqwa and Swazi have recently taken over responsibility for hospitals and health services, from about March 1976.

Shortly after arrival I planned my trip with officials of the State Health Department of RSA, involving especially

Dr J. Gilliland (Co-ordinating Director, State Health Dept.)
Dr E. Glatthaar (in charge of tuberculosis survey and control)
Dr H. Kurstner (epidemiologist)
Dr O. W. Prozesky (Director, National Institute of Virology)

They explained the now independent status of the Secretaries for Health of the "independent countries" and of the homelands, and asked that I explore arrangements for country reports and any necessary surveys with these officials. Accordingly I met and talked with the following persons:

A. "Independent countries"

1. Namibia/South West Africa:	Dr Hitzeroth	- Deputy Director, Preventive Medicine
2. Transkei:	Dr Bikishta	- Secretary for Health, and
	Dr R. F. Ingle	- Chief Medical Officer
3. Bophuthatswana:	Dr J. R. Kriel	- Minister for Health, and
	Dr Theron	- Secretary for Health

B. Homelands

1. Ciskei:	Dr J. Kloppers	- Secretary for Health
2. Kwazulu:	Dr A. S. Nethercott	" " "
3. Lebowa:	Dr Crous	- " " "
4. Venda:	Dr Roos	- " " "
5. Gazankulu:	Dr Karlsson	- " " "

Because of lack of time, I was not able to see the health authorities in the two smallest Homelands; Swazi (area: 304 149 ha, local population: about 100 000) and Qwaqwa (area: 48 244 ha, local population: about 90 000).

Each of the Homelands receives a statutory grant and additional funds voted annually from RSA, with which it develops its own programme in Health and Welfare (as well as in several other fields). Many of the senior medical personnel are seconded from the State Health Department of RSA; most lower-echelon health services staff are locally recruited and have often been locally trained.

Bearing in mind the fact that the last cases of smallpox had occurred in South Africa in 1971, long before their respective health administrations had been established as separate entities, all these officials agreed, after discussion, to collaborate with the State Health Department of RSA rather than themselves attempt to produce individual "country reports" for their "countries" or homelands. This was agreed to by Dr Gilliland, and I understand that Drs Glatthaar, Prozesky and Kurstner will be responsible for preparing the report(s) and organizing necessary surveys.

4. LAST CASES OF SMALLPOX

Official South African statistics for smallpox for the period 1921 to 1971 are given in Annex 2, Table 1. Table 2 of that attachment gives details of notified cases of smallpox in 1971, the last year during which cases occurred in RSA. I visited two localities where cases were found in 1971: the village of Esaurinca in northern Lebowa and a farm near Delmas, a country town near Pretoria.

The last outbreak of smallpox in Namibia/South West Africa occurred in 1956 in the border village of Katwitwi, on the Kavango River. It was said to be initiated by a visitor from Angola; there were 10 cases and two deaths in Namibia/South West Africa. I talked with the nursing sister who had been involved in the outbreak and subsequent control activity. Detailed histories of the last outbreaks in Namibia/South West Africa and all 1971 outbreaks in RSA, and an account of the history of smallpox in RSA and Namibia/South West Africa will be provided in the country report(s).

5. VACCINATION POLICY

Vaccination against smallpox, poliomyelitis and tuberculosis (BCG) is mandatory. Smallpox vaccination is done on the left upper arm, normally at the age of 3 months, with vaccination at school entry (5 years) and again at secondary school entry (10-12 years), catching those then without scars. BCG vaccination is done on the right upper arm, at birth; polio and DPT at 3, 4 and 6 months, measles (so far on a small scale) at 9 months.

I have the impression that the implementation of this vaccination policy differs considerably in different jurisdictions. The country report(s) will outline the differences in smallpox vaccination procedures in the white areas (including black, coloured and Indian townships) of RSA, and in the "independent countries" and different Homelands. My impression is that because of the tight control exercised in the white areas (a "Book of Life": identity card, vaccination record, driving licence, etc. is mandatory for all inhabitants, white, black, Indian and coloured) and the high rate of schooling there, few escape vaccination, which is carried out in hospitals, child welfare clinics, by mobile vaccination teams, and in the schools. All "visiting workers" to the mines (approximately 100 000 a year coming from the Homelands and Malawi; formerly from Mozambique also) are vaccinated and are subjected to detailed health surveillance.

As judged by random vaccination scar surveys, undertaken by Dr Glatthaar as part of a BCG vaccination survey, the situation is less satisfactory in some other areas (e.g. Transkei) where it depends upon the attendance of children at rural (or urban) clinics or at school. My impression was that in Namibia/South West Africa the vaccination programme at clinics and schools is reasonably effective, and is supplemented by house-to-house (or farm-to-farm, in white farm areas) visits by field teams, in the north during the wet season, when malaria control is not possible. Field teams also operate in other areas, sometimes from clinics and sometimes from the central health office. Details of the procedures in different jurisdictions, and their efficiency as judged by random vaccination scar surveys, will be provided in the country report(s).

I examined random groups totalling about 400 persons attending OPD at hospitals and in primary schools in Ovamboland and Kavango in Namibia/South West Africa, and in Lebowa. About 90% had a vaccination scar; some of those with no visible scar had BCG lesions in the other arm, so they had probably been vaccinated against smallpox also. But the problem group is those children who were born at home and who do not attend hospitals, clinics or schools; I do not know how large this group is. Only true random surveys of households would indicate accurately the vaccination rates in the total population; these should be performed in conjunction with facial pockmark surveys under the guidance of State Health Department, especially in regions other than the white areas of RSA.

6. VACCINE PRODUCTION

The smallpox vaccine establishment at Pinelands, near Capetown (Director, Dr Katz) has prepared smallpox vaccine for many years. Since about 1967 the product has been freeze-dried and is distributed in rubber-stoppered ampoules of 25 or 100 doses. Preparation is carried out in sheep after sandpaper scarification of one side. The product of one sheep, after clarification with fluorocarbon, yields two litres of a virus suspension that contains 10^9 PFU per ml. This is diluted tenfold and provides about a million doses of freeze-dried vaccine.

As far as can be determined, the strain used was derived many years ago from the Lister Institute strain. As currently produced the freeze-dried vaccine is said to give good results with few complications if one insertion (scratch) is made; two insertions are said sometimes to produce rather severe local lesions.

Liquid vaccine is now prepared only for sale to Rhodesia, at their insistence. To safeguard its potency it is the practice of the Pinelands Laboratory to supply liquid vaccine containing 10^9 PFU per ml, with a one-month expiry date at the time of issue.

A stockpile for South Africa of 30 million doses of vaccine is being prepared by the Pinelands Laboratory for storage in glass ampoules at -20°C, together with a stock of bifurcated needles and detailed instructions for vaccination.

7. DIAGNOSTIC FACILITIES

The South African Institute for Medical Research provides Laboratory diagnostic facilities for many parts of RSA and Namibia/South West Africa. The large central laboratory is located in Johannesburg and there is a substantial branch laboratory in Windhoek, and some fifty other branch laboratories in hospitals all over South Africa.

Smallpox virus diagnostic work was formerly carried out at the South African Poliomyelitis Research Foundation in Johannesburg (Dr J. H. S. Gear) and the Department of Microbiology at the University of Capetown medical school (Professor Kipps). When Dr Gear retired as Director of the South African Foundation for Poliomyelitis Research, its laboratories and personnel were transformed into the National Institute for Virology (Director, Dr O. W. Prozesky), with its principal laboratories in Johannesburg and branch laboratories in Durban, Capetown, Bloemfontein and Pretoria. Besides producing polio vaccine (in vervet monkey kidney cells) the Institute carries out extensive research in medical virology and provides the major medical viral diagnostic centre in southern Africa.

8. VARIOLA VIRUS STRAINS

In the past, two laboratories in RSA have held strains of variola virus.

Those held in Professor Kipps's department in Capetown were said by Professor Kipps to have been destroyed several years ago, and a recent independent search of deep freeze cabinets there by Professor Naudé of that department revealed that no variola virus was currently held.

A number of strains, of which Professor K. R. Dumbell in England has duplicates, are still held in the deep freeze cabinet at the National Institute for Virology. They are packed in a steel tool box for which only the Director and his chief technician have keys. Dr Prozesky agrees that there is no scientific reason to hold these strains, but authority to destroy them or transfer them to Professor Dumbell has not yet been received from the Secretary of Health, who is still uncertain about access of South African workers to variola virus or overseas laboratories if it were ever needed.

The National Institute for Virology is currently building a P4 (maximum security) facility as a self-standing laboratory, primarily for work on Marburg, Ebola, Lassa fever and similar dangerous African viruses.

9. SMALLPOX SURVEILLANCE

As I understand the situation, the last outbreaks of severe smallpox in the region occurred in 1956 at Katwitwi in Namibia/South West Africa, and in 1964 at Port Elizabeth in RSA. These will be documented in the country reports. Since then 942 cases of variola minor, locally called 'amaas', have been reported in RSA, the last in 1971. No smallpox has been reported in Namibia/South West Africa since 1956.

It is my impression that amaas (variola minor) has never been regarded by the local health authorities as a serious public health problem, compared with tuberculosis, malaria, neonatal tetanus, rabies, etc. In the absence of an external stimulus, such as a visit by a WHO smallpox epidemiologist, no special "active searches" or other activities related to smallpox eradication have been mounted. Prevention of smallpox has rested upon the mandatory vaccination of children at health clinics and schools, and surveillance has been essentially passive and effected by the general preventive and curative health system. Since variola minor leaves little in the way of facial pockmarks, and since it may be more easily confused with chickenpox than severe smallpox, I suggest that special attention should be given to the

chickenpox survey, in order to provide a positive assurance that amaas has not been misdiagnosed.

The effectiveness of the surveillance has been enhanced by several activities undertaken for other reasons: there have been intensive BCG and polio vaccination campaigns recently, and in the northern parts of both RSA and Namibia/South West Africa there is an intensive anti-malaria campaign. A close record is kept of malaria cases, fluorescent antibody surveys for malaria are carried out, and the teams which carry out house-spraying for malaria in the dry season act as mobile vaccination teams in the wet season. As I understand the position in relation to smallpox surveillance, detection of an outbreak of smallpox would depend upon the presentation of a case at a clinic or hospital, or chance recognition by a mobile health team. Apart from two "hospital" epidemics of chickenpox, clinic sisters and doctors to whom I spoke said that they very rarely saw chickenpox, although measles (especially in very young and/or malnourished children) was a major problem. Few "suspect smallpox" cases appear to have been investigated since 1971, but the country report(s) should provide further details of all of those that have occurred, both in 1971 and subsequently.

10. GENERAL COMMENT AND ASSESSMENT

As indicated in the statement on "Objectives" (Section 1), I did not attempt to prepare a country report(s) or to obtain and evaluate the statistical and other data needed for such a report(s). This will be done during the next few months by senior members of the State Health Department. However, I will comment briefly upon the quality of the medical organization in South Africa and of the individuals in it as this affects smallpox eradication and surveillance. Unavoidably, I can provide only a superficial and impressionistic opinion; I hope that the country report(s) will provide more solid information, especially in regard to such matters as the efficiency of registration of births and deaths in all parts of South Africa, as well as data on the distribution of doctors and other health personnel in the big cities, the countryside of "white" areas of RSA, and in the independent countries and Homelands.

In the "white" areas I believe that the medical services are of the same high quality as those in Europe or North America; certainly the hospitals for both whites and non-whites were well-staffed and well-equipped. The large amount of first-class medical research that is being carried out is a good index of the high quality of the health services.

The few visits I was able to make to hospitals and clinics in the other parts of the country (Oshakati and Rundu in northern Namibia/South West Africa, Groothoek in Lebowa, Mmabatho and Montshiwastadt in Bophuthatswana, and near Zwelitsha in Ciskei) suggested that the hospitals were well-run and well-staffed; I was also favourably impressed by the quality of the (black) nursing sisters who conducted clinics in the villages.

The ratio of medical practitioners to population numbers is probably higher than anywhere else in Africa; in RSA in 1975 it was 1/1878 and has risen since then. The backbone of the preventive medicine services, especially in the rural areas and Homelands, are the nursing sisters. There were 14 252 registered medical practitioners, 44 950 registered nurses, 44 654 enrolled nurses and 955 health inspectors in RSA in 1976. All these, and other categories of health workers have risen dramatically since 1950, with percentage increases of 150% for medical practitioners and 300% for registered nurses. [a]

I gave various versions of a lecture on the Global Eradication of Smallpox to audiences of doctors, nurses, health assistants and medical students on six occasions (see Attachment I). On no occasion did a member of the audience question the belief that there was no smallpox in South Africa, although the suspicion was frequently expressed that the breakdown in health

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[a] Further information on the Health Services of the Republic of South Africa is available in the publication "The Health of the People", Rensburg, Johannesburg, 1977.

services in some neighbouring countries posed threats for the reintroduction of smallpox from the north.

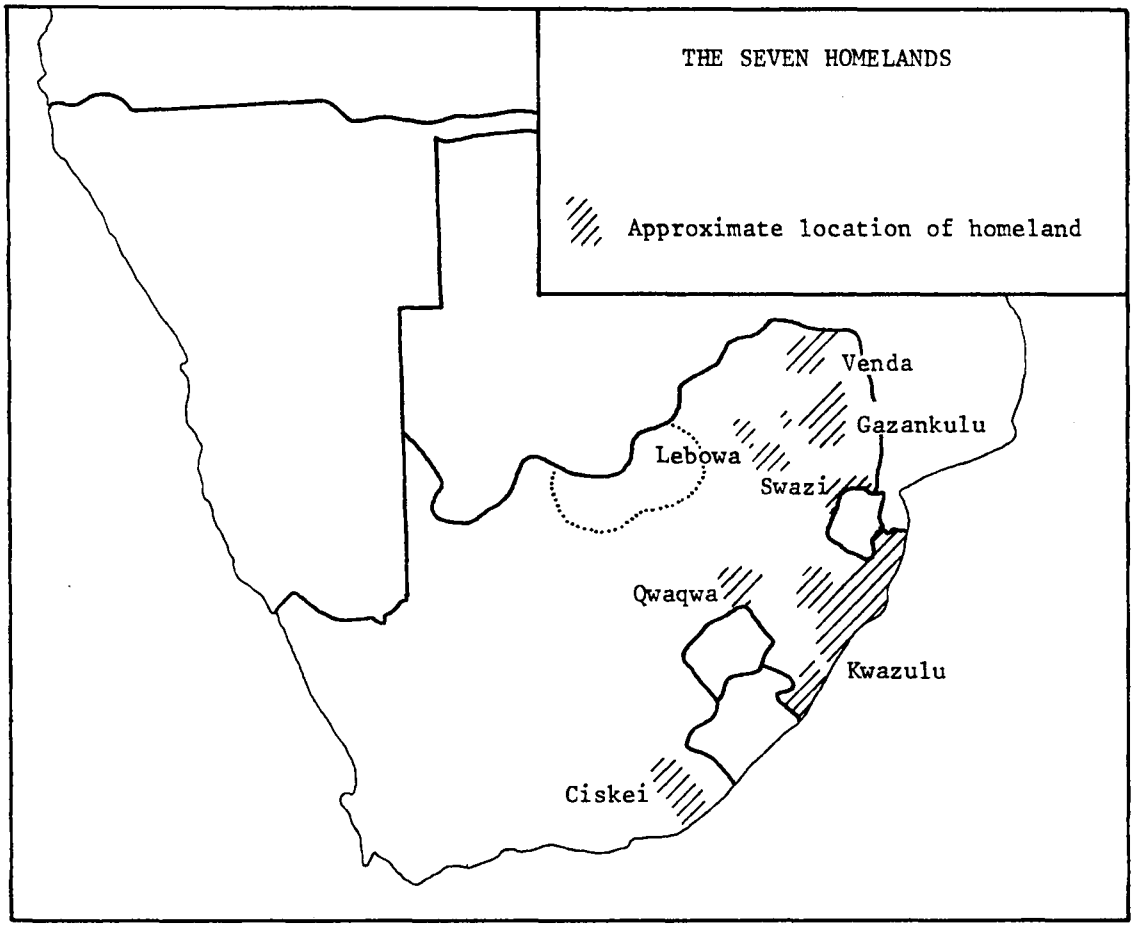
I was favourably impressed with what I saw of the quality of the health services (both facilities and personnel), but it would be presumptuous of me to make a judgement about the eradication of smallpox until I have been able to study the country reports and see the results of the chickenpox survey and the facial pockmark and vaccination scar survey.

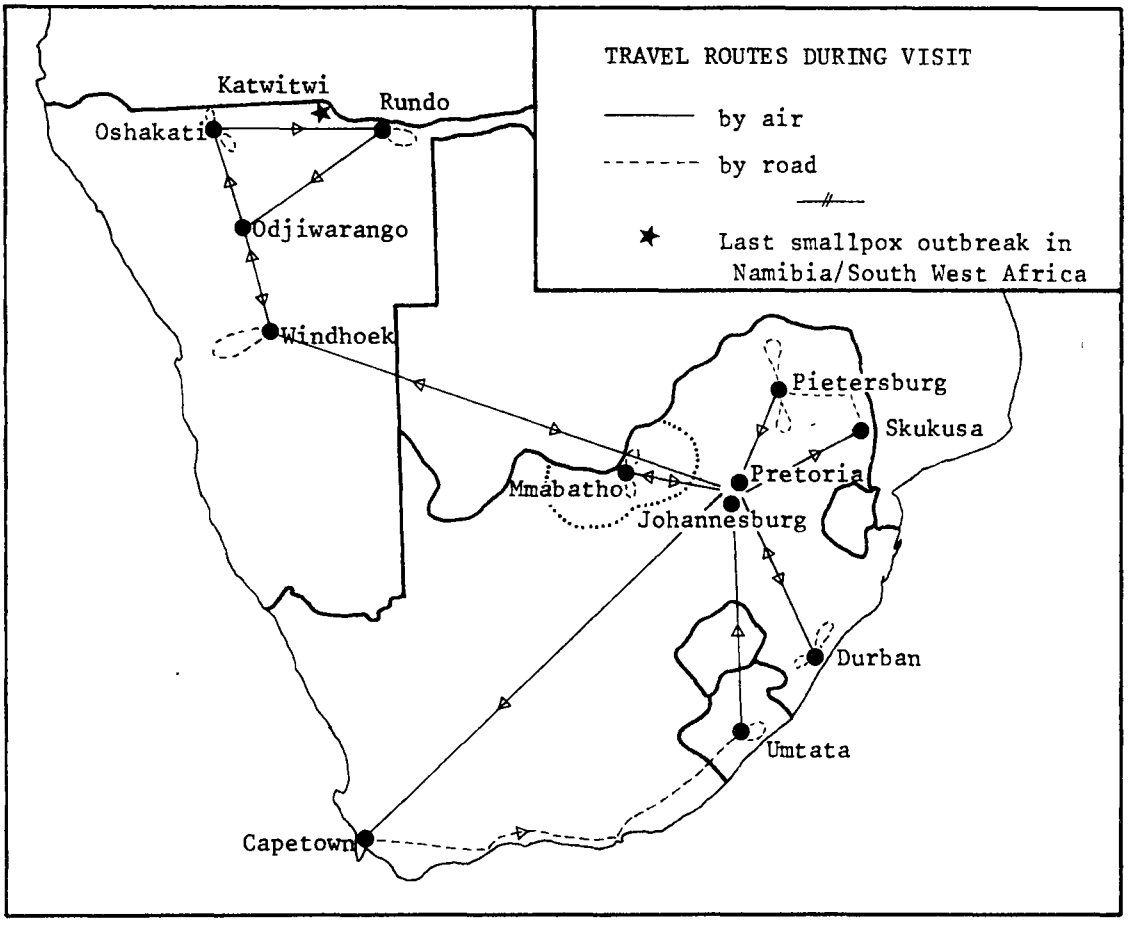
11. ACKNOWLEDGEMENTS

Everywhere I went I was received with great cordiality, and there were frequent expressions of satisfaction that WHO had arranged the visit. No effort was spared to enable me to see what I regarded as the 'vulnerable' areas, the heavily populated parts of Namibia/South West Africa near the Angolan border and the northern parts of Transvaal (Lebowa) and Bophuthatswana near Botswana.

I was driven around the countryside and to clinics and hospitals by senior health officials (Regional Directors, Secretaries of Health, Senior Health Inspectors, Senior Nursing Sisters) over a distance of more than 3 000 km, and a chartered plane was made available for three days so that I could visit the heavily populated areas of Namibia/South West Africa that border on Angola. Such travel afforded opportunities for extensive informal discussion of the health conditions and the complex politics of these parts of Africa, as well as observation of the countryside and living conditions in the rural areas, and the rural hospitals and clinics.

It would be inappropriate for me to name all those to whom I am indebted for help and hospitality, but I would like to pay especial tribute to the assistance rendered by Drs Gilliland, Gear, Prozesky, Joubert, Glatthaar, Hitzeroth and L. S. Smith.


THE SEVEN HOMELANDS
Approximate location of homeland
Venda
Gazankulu
Lebowa
Swazi
Qwaqwa
Kwazulu
Ciskei


TRAVEL ROUTES DURING VISIT
by air
by road
Last smallpox outbreak in Namibia/South West Africa
Katwitwi
Rundo
Oshakati
Odjiwarango
Windhoek
Pietersburg
Skukusa
Pretoria
Mmabatho
Johannesburg
Durban
Umtata
Capetown

ANNEX 1

ANNOTATED ITINERARY

MONDAY 23 JANUARY

National Institute for Virology, Johannesburg. Discussions with Dr James Gear and Dr O. W. Prozesky. Dr Gear has a wealth of experience with tropical (especially viral) diseases of man in southern Africa and with smallpox back to the importation of virulent smallpox from India during World War II.

TUESDAY 24 JANUARY

Conference with State Health Department officials in Pretoria and preparation of travel plans. Dr Gilliland, Co-ordinating Director, Department of Health, Republic of South Africa, was in overall charge of my visit. Details for travel were worked out with the following officials, who will be responsible for the surveys and the production of the country report(s):

Dr E. Glatthaar (now in charge of tuberculosis survey and control)

Dr Kurstner (epidemiologist)

Dr O. W. Prozesky (Director, National Institute for Virology)

WEDNESDAY 25 JANUARY

Visit to Ondersterpoort Veterinary Research Institute. Discussions with Drs Weiss (Director), Erasmus and Verwoerd. Lecture to staff on Global Eradication of Smallpox.

THURSDAY 26 JANUARY

Participation in meeting of all medical virologists in RSA, in Capetown. Discussion mainly about rabies and influenza, but smallpox eradication also discussed.

FRIDAY 27 JANUARY

Visit to Tygerberg Hospital complex (Stellenbosch Medical School), and discussions with Professor W. Becker. Lecture to staff and medical students on Global Eradication of Smallpox.

Visit to Pinelands Vaccine Laboratory and discussions on smallpox vaccine production with Dr Katz (Director of Laboratory) and vaccination procedures with Dr Beem (Deputy Regional Director for the Western Cape region).

MONDAY 30 JANUARY

Visit to Department of Microbiology, University of Capetown. Discussions with Professors Kipps and Naudé. Visited Hospital for Infectious Diseases at Worcester (responsible for half the Western Cape region). Currently there is a hospital epidemic of chickenpox in children's ward, but superintendent (Dr Coetze) cannot recall a severe chickenpox case. Drove to Plettenberg Bay with Professor L. S. Smith (former Regional Director of Western Cape region, now Professor Forensic Medicine at Capetown).

ANNEX 1

TUESDAY 31 JANUARY

Driven from Plettenberg Bay to Port Elizabeth by Dr Albert (local G. P. and Director of Regional Blood Transfusion Service). Visited non-white (Livingstone) hospital, and white hospital. Lectured to local doctors on Global Eradication of Smallpox.

Talked subsequently with Dr Ferguson, who had been MOH at time of a severe epidemic of smallpox in Port Elizabeth in 1964. He was very reluctant to accept idea that South Africa should ever abandon vaccination against smallpox.

WEDNESDAY 1 FEBRUARY

Driven from Port Elizabeth to King Williams Town by Mr Whiteing (Administrative Officer of Blood Transfusion Service, Port Elizabeth).

Drove to Zwetlisha with Dr J. Kloppers (Secretary of Health for Ciskei - had previously been Secretary for Health for Swaziland during its transition to independence). Has a good health centre scheme for Ciskei, staffed mainly by nurses. Mobile TB team carries out house visits and DPT, BCG, polio and smallpox vaccinations. Visited one health centre (after hours) which was impressive in record keeping and acquaintance of the sister with people in the village.

TUESDAY 2 FEBRUARY

Driven by Dr Kloppers from Ciskei to Transkei. Passport control on both sides (RSA and Transkei) of the River Kei. Transkei has fertile rolling country with many rather scattered hamlets (cattle, sheep, goats, mealie plots). Met in Umtata (capital of Transkei) by Dr Bikishta (Minister for Health) and the chief medical Officer (Dr R. F. Ingle). Dr Ingle trying to establish a primary health care system but finds it difficult (much easier to get big hospitals). The health clinics, staffed by two or more nurses, are the basic units, and there are also mobile teams. The health service is based on hospitals (now called community health centres) of which there is approximately one per magisterial district. Dr Ingle seemed rather despondent about getting adequate staffing for the Transkei services.

FRIDAY 3 FEBRUARY

By plane from Umtata to Johannesburg and then Johannesburg to Durban, where met by Regional Director of Health for Natal (Dr Buchan) and several of his officers, and the Secretary for Health for the adjacent homeland (Kwazulu), Dr A. S. Nethercott. Talked at some length with the former epidemiologist at Regional HQ (Dr Jackson) who spoke of the smallpox (amaas) outbreaks from 1963 to 1969. No severe smallpox had been seen in Natal since 1958. Dr Nethercott spoke of last outbreak near Durban, in October 1969, in Shembe community (religious sect suspicious of doctors and vaccination). Later I visited the area. A detailed description of this and two other outbreaks in Natal in 1969 (the last in that area) is available.

I also drove into countryside of Kwazulu to get an idea of the kinds of dwellings and distribution of population in that homeland. Dr Nethercott foresaw problems in maintaining medical practitioners services in Kwazulu hospitals as these were taken over from missions by the Kwazulu administration. He was trying to get clinics in all magisterial districts (with nurses) for primary health care, but as in Transkei said that local emphasis (and funds) was on hospitals.

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SATURDAY 4 FEBRUARY

Spent day with members of Department of Biological Sciences of University of Natal, then flew back to Johannesburg.

SUNDAY 5 FEBRUARY

Plane from Johannesburg to Windhoek. Met by senior health inspector Mr van Zyl and later by Director of Preventive Health Services for Namibia/South West Africa (Dr Hitzeroth). No apartheid since about October 1977, but there are (as in white area of RSA) still black, white and coloured 'towns'. However the new housing development is to be mixed (a novelty to local whites). Namibia is ethnically complex, with the following distinguishable groups among the one million inhabitants: whites, Basters (a self-contained farming community, Hottentot-European crosses and then interbreeding), Hereros, Damaras, Namas (Hottentot), Ovambos, Kavangos and Bushmen. The country is large and very sparsely populated except near to Angolan border (Ovamboland and Kavangoland). Arrangements made to travel to Angolan border by chartered aircraft, and to be accompanied by appropriate senior health inspector.

MONDAY 6 FEBRUARY

Flew from Windhoek to Ondangwa and then drove to hospital at Oshakati, where visited superintendent Dr van Niekerk. Accompanied by health inspectors Heinz and Voordewind visited OPD at this hospital, and schools and did scar surveys (over 90% of 200 positive). Large population (400 000 plus refugees - same tribal group from across border) living in individual groups of huts (kraals) (one group per family) on small patches of dry land now surrounded by flood waters. Cattle and millet. Vaccination is carried out at maternal and child health clinics, hospitals and schools and supplemented by use of mobile teams (in charge of health inspectors) which do malaria control spraying in dry season and vaccination (BCG, polio, smallpox, DPT) in wet season.

Visited large Finnish mission hospital at Onanjokwe, which operates many of the rural clinics (but all preventive medicine operations are fully subsidized and controlled by State Health of Namibia). Unable to visit large Roman Catholic Mission hospital because of flooded roads.

TUESDAY 7 FEBRUARY

Flew to Rundu, on the Okavango River. Smaller but dense population of Kavangos here (65 000 increased to 100 000 by refugees from Angola) mostly close to river. Some bushmen in hinterland and Caprivi Strip. Visited Leper Hospital at Masere and talked with Sister in Charge (Sr Laggia) who had been associated with the last outbreak of smallpox in SWA, which occurred at Katwitwi on the Okavango River, an Angolan who crossed border with disease in 1956. Ten cases recognized, 2 deaths. Prompt response with three extra doctors sent from Windhoek. House isolation with guards and extensive vaccination contained outbreak.

WEDNESDAY 8 FEBRUARY

Examined youngest age group - 2 schools - approximately 90% of about 120 examined had smallpox and BCG scars. Flew back to Windhoek with stop-off at Odjiwarango, a prosperous country town where local GP showed me around "free" (formerly non-white) and "paying" (formerly white) hospitals. He had been using liquid (one dose capillary) vaccine on white children and complained of low take rate. Went to clinic which reported good take rate (but was using

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freeze-dried vaccine).

THURSDAY 9 FEBRUARY

Visit to local white (cattle) farm and looked at living conditions of blacks employed there. In this area mobile teams visit farms (where all people, black and other, in area live) and vaccinate. Visited large and elaborate new hospital in Windhoek and gave lecture to large audience of doctors, nurses, and health assistants on Global Eradication of Smallpox.

FRIDAY 10 FEBRUARY

Flew to Johannesburg and went to National Institute for Virology. Gave lecture on Global Eradication of Smallpox to a large audience.

SATURDAY 11 FEBRUARY

Flew to Skukusa and met by Dr G. Joubert, Regional Director of Medical Services for Northern Transvaal. Spent weekend with him in Kruger National Park.

MONDAY 13 FEBRUARY

Drove with Dr Joubert to Tzaneen, looking at new black township of Namakgala (in Lebowa). Tzaneen has subtropical wet climate with banana, pawpaw and avocado plantations. To Malaria Institute and inspected with Dr Hansford (Director). WHO malaria workers there recently (current work involves use of fluorescent antibody for malaria antibody surveys and gelelectrophoresis of single mosquitoes in study of gambiae and funestis complexes). Met with Secretaries of Health and their colleagues from the three northern Homelands: Lebowa, Gazankulu and Venda. Gave lecture on smallpox eradication campaign and requirements for surveys and country report for South Africa (and role of information from Homelands). They promised co-operation but one of the Secretaries raised question of funding (all Homelands health services operate their own individual budgets). Drove to Pietersberg (Regional Centre for northern Transvaal).

TUESDAY 14 FEBRUARY

Extensive drive around northern Lebowa to see the countryside and living conditions. Scar survey (76/82 positive) in youngest class of local school. Saw the only remaining white technical assistant in Lebowa Health Service (ex World War II veteran, remains at request of local chief), who said that he knows and visits all houses in his area; and vaccinates everyone. Staff nurse at nearby village clinic confirmed this, in comment on vaccination report book.

Called at house in village of Esaurinca where smallpox had occurred in 1971. Present (female) inhabitant couldn't remember the incident. Visited local district surgeon who said that in 1971 he had found a smallpox case in Botswana near the border, where he had a clinic (he and another S. African doctor, and the local malaria control teams, work over the Botswana border, at request of Botswana health authorities). Said that this case (there were others in Botswana at this time) had been wrongly associated with cases at Jane Furze Hospital by WHO, as a S. African case.

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WEDNESDAY 15 FEBRUARY

Drove through southern part of Lebowa to Groothoek Hospital (mission hospital taken over by state and enlarged; now one of principal hospitals in northern Lebowa). Talked with superintendent and staff. They rarely see chickenpox. Gave lecture to medical and nursing staff on Global Eradication of Smallpox.

Hospital functions as 'community centre' with public health responsibility and supervision of surrounding clinics. There is a special public health nurse in hospital administration whose job is to co-ordinate statistics from clinics. Visited a rural clinic. Nurse in charge had rarely seen chickenpox. Plane from Pietersburg to Johannesburg.

THURSDAY 16 FEBRUARY

Flew from Johannesburg to Mafeking (in Bophuthatswana - which since December 1977 has been recognized as an independent country by RSA). Met by Secretary of Health Dr Theron and lunched with Minister for Health (Dr J. R. Kriel) who is the only white cabinet minister in Bophuthatswana. Visited a clinic with a group of senior (black) nurse administrators, one of whom spoke feelingly about Bophuthatswana being left in the cold by WHO. Sisters vaccinate at clinics (one day a week) and at schools (at entry), with occasional field trips. Most field trips are made by male health inspectors who can vaccinate against smallpox and tuberculosis, but are not allowed to use a syringe (status problems, both as regards sex and professional training). Hospital reported that chickenpox was common (as hospital infection), sisters at clinics said that they saw little chickenpox.

FRIDAY 17 FEBRUARY

Flew back to Johannesburg and then to State Health Department where further discussions on report with officials listed in 24 January comment. Suggested that the Report should be submitted by May and a Supplementary Report on the Chickenpox Survey by September/October.

SATURDAY 18 FEBRUARY

Visited South African Institute of Medical Research. Interesting discussions on their work with entomologists, parasitologists, bacteriologists and epidemiologists.

SUNDAY 19 FEBRUARY

Daylight flight to Nice where overnight stop.

MONDAY 20 FEBRUARY

Flight Nice to Geneva.

ANNEX 2

TABLE 1: NOTIFIED SMALLPOX CASES AND DEATHS

SOUTH AFRICA 1921 - 1971

Year	Cases	Deaths	Year	Cases	Death
1921	787	-	1946	1 271	60
1922	-	-	1947	978	27
1923	285	-	1948	271	0
1924	246	-	1949	923	3
1925	-	-	1950	825	62
1926	72	-	1951	-	-
1927	126	-	1952	80	17
1928	24	-	1953	14	0
1929	26	-	1954	7	0
1930	41	-	1955	27	0
1931	31	-	1956	4	0
1932	9	-	1957	0	0
1933	15	-	1958	0	0
1934	29	-	1959	0	0
1935	29	-	1960	65	0
1936	24	-	1961	8	0
1937	27	-	1962	103	0
1938	653	-	1963	254	0
1939	408	-	1964	301	0
1940	681	-	1965	191	1
1941	1 014	-	1966	256	0
1942	1 781	-	1967	43	0
1943	1 469	-	1968	81	0
1944	1 046	-	1969	236	0
1945	3 317	305	1970	121	0
			1971	14	0

TABLE 2: NOTIFIED CASES AND DEATHS - SMALLPOX IN RSA, 1971.

MONTH	CASE No.	HEALTH REGION	AUTHORITY	PLACE	RACE	SEX	AGE GROUP
March	1	Northern Transvaal	Magistrate	Nylstroom	Black	Male	0 - 4 years
"	2	do.	do.	do.	do.	Female	5 - 9 years
"	3	do.	do.	do.	do.	do.	40 - 44 years
"	3	do.	do.	do.	do.	do.	"Child", age unspecified
"	5	Southern Transvaal	Peri Urban Health Board	Delmas	do.	do.	0 - 4 years
"	6	do.	do.	do.	do.	Male	20 - 24 years
"	7 + 8	2 x do.	Municipality	Benoni	do.	Female	Age unspecified
"	9	Free State	Magistrate	Odendaalsrus	do.	Male	10 - 14 years
"	10	Natal	Magistrate	Empangeni	do.	Female	5 - 9 years
April	11	Southern Transvaal	Municipality	Brakpan	do.	Female	0 - 4 years
"	12	do.	do.	do.	do.	do.	0 - 4 years
"	13	do.	do.	do.	do.	Male	5 - 9 years
May	14	Southern Transvaal	Peri Urban Health Board	Delmas	do.	Male	25 - 29 years
Total:	14 cases 0 deaths						

No cases or deaths from smallpox have been reported since May 1971.