

A STUDY OF SMALLPOX IN THE TUAREGS IN TAHOUA, NIGER

A. R. Masso¹

INTRODUCTION

The northern arrondissements of Tchén Tabaraden, Bilma, and Agadez in Niger are largely populated by pastoral nomads called Tuaregs. Their estimated population is 150,000. Efforts to vaccinate them have not been very successful. However, since only one case of smallpox has been reported from these arrondissements in the last two and one half years the threat of smallpox has generally been considered minimal. Nomadic populations in other parts of West Africa have been considered to be important sources of smallpox transmission within their own groups and as sources of infection of sedentary populations. This belief has been based largely on the known smallpox transmission by seminomadic Fulani stock-breeders on the Nigeria/Niger and Upper Volta/Niger borders.

The purpose of this study was to determine the potential threat of smallpox in the pastoral Tuareg society.

ETHNIC GROUPS SAMPLED

The ethnic groups studied were Tuareg and Bouzou Nomads in the Arrondissement of Tohin Tabaraden. The age and sex distribution of the 502 persons sampled is shown below.

Table 1: Age and Sex Distribution of Sample of Tuareg and Bouzou Nomads

| | <u>M</u> | <u>F</u> | <u>TOTAL</u> |
|-------------|-----------|-----------|--------------|
| 0-11 months | 10 | 16 | 26 |
| 1-4 years | 50 | 46 | 96 |
| 5-14 years | 49 | 46 | 95 |
| 15-44 years | 127 | 102 | 229 |
| 45+ | <u>32</u> | <u>24</u> | <u>56</u> |
| TOTAL | 268 | 234 | 502 |

RESULTS

The sample population was examined for vaccination scars, (Table 2), smallpox scars, (Table 3), and variolation scars, (Table 4).

The vaccination scar rate was 38.4% for the population as a whole; scar rates were highest (52.6%) in the 5-14 year age group; the rate was only 35.4% in the 1 to 4 year age group, and 25.0% in persons 45 years old or above. In the adult group the rates in males and females were similar.

Smallpox scars were found in 2.2% of the group. None was found in persons under 5 years of age and the highest rate, in those over 45 years was only 3.5%.

¹Operations Officer Advisor, NCDC/USAID, Niamey, Niger

On the other hand variolation scars were found in 29.0% of persons. The rate was highest in those over 45 years (53.6%) and decreased with decreasing age. The rate was 9.4% in the 1 to 4 year age group; and no variolation scars were seen in children from 0 to 1 year old.

When a smallpox immunity index was calculated, based on the assumption that persons with vaccination scars, smallpox scars, or variolation scars were immune, it was concluded that 67.1% of the population was immune.

Table 2. Vaccination Scar Rates by Age Groups

| | <u>No. Sampled</u> | <u>No. with Vaccination scars</u> | <u>% with vacci- nation scars</u> |
|-------|--------------------|---------------------------------------|---------------------------------------|
| 0-1 | 26 | 1 | 3.8 |
| 1-4 | 96 | 34 | 35.4 |
| 5-14 | 95 | 50 | 52.6 |
| 15-44 | 127(M) 102(F) | 54(M) 40(F) | 42.5(M) 39.2(F) |
| 45+ | 56 | 14 | 25.0 |
| Total | 502 | 195 | 38.4 |

Table 3. Smallpox scars by Age Groups

| | <u>No. Sampled</u> | <u>No. with Scars of Smallpox</u> | <u>% with scars of Smallpox</u> |
|-------|--------------------|---------------------------------------|-------------------------------------|
| 0-1 | 26 | 0 | 0 |
| 1-4 | 96 | 0 | 0 |
| 5-14 | 95 | 1 | 1 |
| 15-44 | 127(M) 102(F) | 6(M) 2(F) | 4.7(M) 1.9(F) |
| 45+ | 56 | 2 | 3.5 |
| Total | 502 | 11 | 2.2 |

Table 4. Variolation Scar Rates by Age Groups

| | <u>No. Sampled</u> | <u>No. with variolation scars</u> | <u>% Variolated</u> |
|-------|--------------------|---------------------------------------|---------------------|
| 0-1 | 26 | 0 | 0 |
| 1-4 | 96 | 9 | 9.4 |
| 5-14 | 95 | 18 | 18.9 |
| 15-44 | 127(M) 102(F) | 48(M) 41(F) | 37.8(M) 40.2(F) |
| 45+ | 56 | 30 | 53.6 |
| Total | 502 | 146 | 29.0 |

CONCLUSIONS

Although the Tuareg are a poorly vaccinated group (38.4%), the threat of smallpox is diminished because of an unusually high variolation rate (29%). The very low smallpox scar rate, (2.2% as compared to 5.4% in Niger's sedentary population), in all age groups is evidence that the group sampled has had little smallpox in the past. Furthermore, virtually no smallpox has been reported from this area in two and one half years. This is substantiated by the fact that no scars of smallpox were observed in the 0-4 year age groups.