

Communication brève — Korte mededeling — Short communication

A NOTE ON THE PREVALENCE
OF *SCHISTOSOMA HAEMATOBIMUM* AND *S. MANSONI*
IN KINDU AND KASONGO, KIVU AREA, ZAIRE

by

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Introduction

Scant information is available on the present situation of endemic schistosomiasis in the Republic of Zaire. In Eastern Zaire an important focus of *S. mansoni* endemicity has been reported recently in the Maniema forest, Kivu (Polderman, 1978). Taking advantage of a short visit to Kindu and Kasongo on the western fringe of Maniema, one of the authors (B. G.) had the opportunity to examine small samples of school-children in these two towns with an approximate population of 50,000 and 30,000 people respectively. The results will be briefly presented and compared with available earlier information on schistosomiasis in the same areas.

Materials and Methods

School-children, 5 to 15 years old, in approximately equal numbers of each sex were registered and examined for liver and spleen enlargement. They were asked about complaints of haematuria, loose stools with or without blood and abdominal pain. Stools were collected and examined by a slightly modified Kato method on a 25 mg sample. Urine samples of 20 ml were collected at noon, in Kasongo after some physical exercise. A 10 ml aliquot of urine was centrifuged and the whole sediment was examined. Eggs were counted and microscopic haematuria evaluated. All the examinations were done by one of the authors (B. G.) with the exception of those of urine samples in Kindu which were performed by an experienced Zairian technician. The children were pupils of the primary schools of Tokolete in Kindu and of Lamba at Kasongo-Rive, which is situated on the right bank of the Lualaba river about 10 miles west of Kasongo. As urine and stool collection took place on different occasions, there are some discrepancies in the number of samples, but the same children are concerned.

Results

The results of the examinations for *S. haematobium* and for *S. mansoni* are presented in tables 1 and 2.

TABLE 1
Prevalence of Schistosomiasis and egg loads
in children of the Tokoleta school at Kindu

| Age | <i>S. haematobium</i> | | | <i>S. mansoni</i> | | |
|----------|-----------------------|----|-----------------------|-------------------|---|--------------------|
| | n | + | Egg count/ 10 ml * | n | + | Egg count/ gr * |
| 5 | 3 | 1 | 4 | 3 | 0 | 0 |
| 6 | — | — | — | — | — | — |
| 7 | 2 | 1 | 114 | 4 | 3 | 60 |
| 8 | — | — | — | — | — | — |
| 9 | 7 | 7 | 58 | 7 | 1 | 10 |
| 10 | 8 | 7 | 59 | 9 | 1 | 4 |
| 11 | 3 | 1 | 70 | 2 | — | — |
| 12 | 3 | 2 | 59 | 4 | — | — |
| 13 | 3 | 2 | 79 | 5 | 1 | 32 |
| 14 | — | — | — | 5 | 0 | — |
| 15 | 1 | 1 | 84 | 1 | 1 | — |
| 16 | 1 | 0 | 0 | 0 | 0 | — |
| All ages | 32 | 23 | 57 | 40 | 7 | 10 |

* Arithmetical means; negatives included.

TABLE 2
Prevalence of Schistosomiasis and egg loads
in children of the Lamba school at Kasongo-Rive

| Age | <i>S. haematobium</i> | | | <i>S. mansoni</i> | | |
|----------|-----------------------|---|-----------------------|-------------------|----|--------------------|
| | n | + | Egg count/ 10 ml * | n | + | Egg count/ gr * |
| 5 | 1 | 0 | 0 | 1 | 0 | 0 |
| 6 | 3 | 0 | 0 | 2 | 0 | 0 |
| 7 | 7 | 0 | 0 | 5 | 2 | 232 |
| 8 | 6 | 1 | 2,3 | 4 | 2 | 30 |
| 9 | 7 | 0 | 0 | 7 | 4 | 97 |
| 10 | 8 | 1 | 0,1 | 8 | 8 | 836 |
| 11 | 5 | 0 | 0 | 5 | 5 | 2,392 |
| 12 | 10 | 1 | 3,4 | 9 | 9 | 896 |
| 13 | 2 | 0 | 0 | 2 | 2 | 1,460 |
| 14 | 4 | 1 | 7,8 | 2 | 2 | 48 |
| 15 | 5 | 0 | 0 | 5 | 3 | 216 |
| All ages | 61 | 4 | 1,3 | 52 | 37 | 632 |

* Arithmetical means; negatives included.

There was no clear correlation between infection with *S. haematobium* and the complaint of haematuria. Gross haematuria was not observed though almost all samples with schistosoma eggs showed microscopical haematuria.

No blood was seen in the negative samples.

The average enlarged spleen was 0.5 in Kindu, 1.1 in Kasongo (Hackett Scale). Moderate liver enlargement (3-5 cm) was present in 5 children in Kindu (11 per cent) and 12 children in Kasongo (25 per cent). These indices showed no relation to individual egg counts. The complaint « diarrhoea with blood » was more frequently found in heavily infected children than in negative ones.

On microscopical examination, fragments of red blood cells were found in almost all stool samples in Kasongo, even in the ones negative for schistosoma eggs. The low prevalence of other intestinal worms was noteworthy in Kasongo. There were no differences in prevalence between boys and girls in both schools.

Discussion

Gillet and Wolfs (1952) have reported urinary infection by *S. haematobium* (13 per cent), intestinal infections with terminal spined eggs (17 per cent) which could be at least partly attributed to *S. intercalatum* and mixed infections (8 per cent), in a group of 146 school boys aged 6 to 14 years old in Kindu. Five cases of schistosomiasis mansoni were considered imported. They quote a prevalence of *S. mansoni* of 80.55 per cent in Kasongo, in a group of 108 persons, mainly children, of what appears to be the same school as has been examined now. No *S. haematobium* infections were found at that time.

Present points of interest in Kindu are :

- 1) The prevalence of *S. haematobium* scores much higher than reported earlier (Gillet and Wolfs, 1952). Egg loads are moderately high. The comparison is however not entirely possible as different schools were examined. Anyway, urinary schistosomiasis appears now to be of some importance in Kindu.
- 2) No terminal spined eggs were observed in the stools this time. Local laboratory technicians confirm that such infections are uncommon nowadays. These data appear to confirm retrospectively the correctness of the previous identification of *S. intercalatum* (Gillet and Wolfs, 1952). The only ecological change which might on first sight be related to this observation, is that the cattle-stock and -traffic which are said to have been quite important before 1960 have now disappeared from the area.
- 3) The limited number of infections by *S. mansoni* and their scanty worm-loads confirm the former observations. The presence of foci of transmission of *S. mansoni* in the neighbourhood of Kindu can, however, not be excluded, as similar numbers of patients were treated for *S. haematobium* and for *S. mansoni* in 1978-1979 at the Kindu hospital.

Some interesting features have also been noted in Kasongo :

- 1) Present-day prevalence figures are very similar to those reported by Gillet and Wolfs in 1952 and average egg-loads appear to be of the same order of magnitude, though the figures are not directly comparable. The same school was apparently examined and the local population appears to be stable even though the urban center of

- Kasongo has now been moved some 10 miles eastwards. The distribution of prevalence and egg-loads by age reflects an endemic situation.
- 2) Infections with *S. haematobium* are uncommon and slight in Kasongo-Rive.
 - 3) Though prevalence and egg-loads of *S. mansoni* appear to be quite high, this does not seem to affect this population very seriously. Infected children complain more often of diarrhoea with blood than uninfected ones. The relation is obscured by the fact that most of the samples examined contained some blood at microscopical examination, maybe a consequence of wide-spread use of enemas in the area. Only one boy produced a stool sample that was clearly dysenteric, with blood and mucus. As a matter of fact, he scored the highest egg count (116/25 mg).

Conclusion

The prevalence of *S. haematobium* in Kindu and of *S. mansoni* in Kasongo are high. Our observations and evidence from hospital records suggest that transmission of both species might occur in or near both towns. The apparent disappearance of *S. intercalatum* in Kindu has to be confirmed. The importance of schistosomiasis as a problem of health in the area should be further evaluated.

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