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Miscellanea.

Present Situation of Schistosomiasis in Turkey.

By NEVZAT GÜRALP.

Schistosomiasis has long been an important and serious disease of man. FAUST (1) reports that pathological studies of mummies showed that this disease existed in the preChristian era. He states also that the original habitat of *Schistosoma haematobium* is the Lower Nile Valley which even today is an area of hyperendemicity. According to him, many foci of *S. haematobium* infection exist in the Syrian areas near the Turkish border. STOLL (7) has estimated that 50% of the people of some districts of East Africa and 10% of North Africa's human population carry this parasite. According to STOLL's (7) calculation, there are about 39 million people in the world who are infected with schistosomes.

There are several references in the literature to vesical bilharziosis in Turkey. FUAT (2) reported that *S. haematobium* was seen in four or five soldiers who served in Arabia and Iraq and returned to Turkey before World War I. According to OYTUN (6), K. SERAV observed four cases of *S. haematobium* infection among patients who came to Ankara from Urfa and Mardin. These patients were known to have spent some months in Syria. This author (6) states that it is possible that infection with this parasite may occur among natives who have never been out of Turkey. GÜNALP (3) reported the successful treatment with tartar emetic of a soldier from Hanika village, Gergüç district, Mardin province, whose urine contained eggs of *S. haematobium*. GÜRSEL (4) stated that he found foci of infection with this parasite in the villages of Gündüksadik and Giribya, Nusaybin district, province of Mardin, Turkey. His examinations showed that 86% of the inhabitants of Gündüksadik and 12.5% of the people of Giribya were infected. He found cercariae of *S. haematobium* in specimens of the snail, *Bulinus truncatus*, collected in the area. WELLS (8) examined the urine of 224 people who live around Urfa, in southeastern Turkey, without finding any schistosome ova.

KUNTZ and MALAKATIS (5) exposed 472 animals to the cercariae of *Schistosoma haematobium* under good conditions. Their results were as follows.

All albino mice and hamsters exposed to cercariae were found to be infected, but drastically reduced numbers of the parasites were found in albino rats and guinea pigs. Rabbits and dogs were refractory to infection and cats produced small numbers of subnormal parasites.

The same authors (5) infected goats but these animals had poor tolerance for *S. haematobium*. They said "Most of the recovered parasites from the goats were in the intrahepatic portal vessels. Several patches of eggs were found in the superior mesenteric veins in the wall of the lower part of the small intestines".

The studies reported here were made to determine if schistosomes could be found in domestic ruminants in southeastern Turkey, to add to our present knowledge of the disease in man in this area, and to collect and examine snails which might act as intermediate hosts of schistosomes.

Materials and Methods.

A total of 268 sheep, 181 goats, and 75 cattle were examined at Diyarbakir, Ergani, Silvan, Chermik, Mardin, Nusaybin, and Urfa slaughter houses. Be-

fore the animals were killed, feces and scrapings from their rectums were collected for examination. The feces were examined by concentration methods and the scrapings by pressure technic. After slaughter the mesenteric and portal veins were examined macroscopically in good daylight for mature schistosomes.

Stool and urine samples from 19 people from the villages of Gündüksadik, Tezharap, Chamurlu, and Giribya were collected. The urines were centrifugated for three minutes by hand and the sediments were examined microscopically for schistosoma ova. Snails were collected from several streams of the area and crushed specimens were examined for rediae and cercariae. The stools were examined both by sedimentation and flotation methods.

Results.

No schistosome ova were seen in either fecal samples or rectal scrapings, and no mature schistosomes were found in the veins of the 268 sheep, 181 goats, and 75 cattle examined at the slaughter houses.

S. haematobium ova, oval in shape, bearing a spine at one end, and $145.44 \times 45.45 - 59.08$ microns in size were seen in urine sediments of two of five persons (40%) from Giribya village, and three of six persons (50%) from Tezharap village. No such ova were seen in urine sediments from eight people from Gündüksadik and Chamurlu villages. There was only one female among the 19 people examined. No ova were found in her urine sediment.

The following species of snails, none of which are known to be vectors, were collected in the area and examined for rediae and cercariae by crushing and viewing with a low-power microscope: *Theodoxus mesopotamica* (Martens), *Hydrobia gaillardoti* (Bourguignat), and *Melanopsis mingrelica*. No immature schistosomes were found in any of those examined.

Discussion.

Since, according to FAUST (1), there are many foci of *S. haematobium* infection in Syria near the Turkish Syrian border, it is not surprising to find schistosomiasis on the Turkish side of this border. Since the infections reported by FUAT (2) and seen by K. SERAV as reported by OYTUN (6) were in people who were known to have spent some time in Syria, it cannot be said that this parasite is established and spreading in the villages from which the patients seen by these observers came. The findings of GÜRSEL (4) and of the writer show that *S. haematobium* has definitely become established in the villages of Gündüksadik, Giribya, and Tezharap. It is quite possible that there are other foci of infection not discovered as yet.

Physicians of the Nusaybin Health Center told the author that they treated patients successfully with Miracil D (Bayer) and that they used sodium pentachlorophenate as a molluscicide in their campaign against schistosomiasis. But the continued presence of infected people and the finding of large numbers of snails in the Suruc River indicate that the present program has not succeeded in either ridding all the human carriers of these parasites or clearing the streams of snails. It is the opinion of the writer that this disease is at present probably localized in a few foci in Mardin, a province of southeastern Turkey. But if vigorous control and stamping out measures are not adopted and carried through to successful conclusions, this disease may become quite widespread. The way of living of the people of the area is conducive to increase rather than decrease the amount of schistosomiasis in Turkey.

Although KUNTZ and MALAKATIS (5) reported that they succeeded in infecting goats artificially with *S. haematobium*, neither this parasite nor any other schistosomes were found in the goats, sheep and cattle examined.

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Biological Notes on the *Cryptotermes* Species of Indonesia.

By L. G. E. KALSHOVEN, Blaricum, the Netherlands.

Introduction. In the material on which HOLMGREN based his paper "Termiten aus Java und Sumatra" (1913) he found some small imagos, collected on Mount Gedé by E. JACOBSON in 1911, a similar imago from the volcanic Krakatau Island in the straits between Java and Sumatra (leg. JACOBSON 1908) and a dry mounted imago from Deli, Sumatra (leg. DE BUSSY), which specimens he assigned to two species of *Cryptotermes*, *C. jacobsoni* n.sp. and *C. domesticus* (Hav.) Apparently the material had been taken at light and no colonies had been found.

In 1923 my friend A. T. J. BIANCHI, wood technologist at the Forest Research Institute in Bogor, brought me a sample from the collection of wood specimens which was thought to be hollowed out by a drywood borer, as frass in the form of small pellets had been ejected from some holes in its surface. Split in two the little block appeared to contain a complete colony of a small termite species, the soldiers showing the stunted head which is characteristic of *Cryptotermes* species. Similar pellets, the size of small seeds, cylindrical in form and with impressed sides, had already often been noticed in the houses on window sills,