

# Miscellanea : Taxonomic research on the etiology of hookworm : disease occurring on the shores of the Black Sea, Turkey

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## Taxonomic Research on the Etiology of Hookworm Disease occurring on the Shores of the Black Sea, Turkey.

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During the summer of 1951, one of us visited the Turkish provinces on the shores of the Black sea and studied the hookworm problems of the area. Special attention was given to the occurrence and identification of these parasites and to prophylactic measures being taken. A report of the findings was submitted to the Ministry of Health and Social Help and later results of the work were published in both Turkish and German.

A taxonomic study has been made both of the parasites we obtained from infected people and of those sent to us later by Dr. MUHARREM, Director of Health and Social Help of Trabzon. This paper reports the results of this study.

### Materials and Methods.

The specimens were obtained from stools of patients who had been treated with carbon tetrachlorid at either Trabzon State Hospital or the Necator Control Dispensary at Rize. The infected individuals were originally from Akçaabat, Vakfıkebir, Of, Sürmene, Yumra, Pazar, Tirebolu, Görele, Trabzon, Çaykaya and Giresun, the majority being from Akçaabat, Vakfıkebir and Of. They were from 10 to 50 years old.

Stools were mixed with water and the parasites were removed by means of a fine brush or a needle. They were washed first in tap water, then in 10% saline solution, a brush being used to clean them properly. They were fixed in 10% formalin and preserved in 70% alcohol-glycerin solution. They were cleared in Amann's lactophenol.

### Results.

Hookworms were collected from the stools of 61 patients; 55 females and 6 males. All told, 1,869 hookworms were collected and identified.

Of these 1,791 (95.83%) were identified as *Necator americanus* (STILES 1902) and 78 (4.17%) as *Ancylostoma duodenale* (DUBINI 1843). No specimens of any of the other three species known to occur in man, namely *Ancylostoma caninum* (ERCOLANI 1859), *A. brasiliense* (DE FARIA 1910), and *A. malayanum* (LANE 1916) were found.

Only *N. americanus* occurred in 48 (78.69%) of the 61 hookworm infected patients. Both *N. americanus* and *A. duodenale* were found in the other 13 (21.31%) infected patients.

The largest number of hookworms collected from a patient was 55, of these, 39 were *N. americanus* and 16 *A. duodenale*.

The largest number of *N. americanus* collected from a single individual was 52 and of *A. duodenale* 16.

### Discussion.

Workers in other countries have reported that women are more susceptible to hookworms than men are. Our findings tend to substantiate this.

*A. caninum* is known to occur in dogs in Turkey. Since this parasite has been found in human beings in other countries, it may be that a larger series of examinations would result in finding it as a parasite of man in Turkey also.

*Summary.*

A taxonomic survey has been made on the hookworms collected from the infected patients on the Black sea shores of Turkey and diagnosed as *Necator americanus* and *Ancylostoma duodenale*. *N. americanus* is much more prevalent than *A. duodenale*.

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