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helminthological notes from Hawaii

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Helminthological notes from Hawaii *

The small archipelago known as Hawaii, or the Sandwich Islands, is separated from any mainland and from other groups of islands by a stretch of ocean that is nowhere less than 2,000 nautical miles wide. It also has such scant land and freshwater fauna that, leaving aside marine animals, there is very little new to be expected in helminthology. In fact, no unknown or particularly interesting species has been described from here. However, several parasites have been imported, in part through the immigration of diverse human races, in part through the introduction of domestic animals, and some of these parasites have found very favorable conditions for development. A short communication on these invaders, some of which may be of political and economic importance, may not be entirely devoid of interest.

I have observed the following species of human parasites in Hawaii:

- *Ascaris lumbricoides*
- *Trichocephalus dispar*
- *Oxyuris vermicularis*
- *Rhabdonema strongyloides*
- *Ancylostoma duodenale*

Besides these, a tapeworm is sometimes seen, which probably is *Taenia mediocanellata*, but it is still uncertain whether it is picked up on the islands.

Of these species, *Trichocephalus dispar* has been found only in stools and at the egg stage. Here, as elsewhere, it seems to be widespread although in most cases only moderately numerous. I have never observed symptoms that were due solely to its presence. But lately, as medical circles have once again begun discussing the existence of a *Trichocephalus* disease and lamenting its incurability, I must emphasize that this parasite can be eliminated by thymol as well as by *Extractum filicis*. Although a cure does not always take place, it does occur quite frequently, and so this treatment cannot be considered worthless.

*Rhabdonema strongyloides* has been observed a few times at the larval stage, together with *Ancylostoma duodenale*. I have also succeeded in quite easily raising

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the generation found free in the feces. There were no special symptoms present, and I continue to doubt that this parasite can really be blamed for Cochinchina diarrhea.

I have repeatedly observed *Ascaris lumbricoides* together with *Ancylostoma duodenale* and a few times alone, mostly in children.

I once observed *Oxyuris vermicularis* as a household-disease. The constant itching and continuous disturbance of patients’ nightly rest had a serious affect on these people. The disease had been brought into a (white) family of good social standing by an adopted child, who suffered the most serious case. The child presented the symptom of crying quite loudly in its sleep at night. I have good reasons for believing that this was due to the irritation caused by the emigrating *Oxyuris*.

The hitherto-unknown occurrence of *Ancylostoma duodenale* in the Hawaiian Islands confirms the view I formerly expressed as to its wide distribution throughout all warmer countries. The first focus must have occurred on the island of Hawaii, where it spread among Portuguese laborers employed on sugarcane plantations near Hilo. This region sees great amounts of precipitation and has a highly questionable quality of drinking water. From there, the disease was carried to Oahu, where I found three foci, two of them in the Kalihi and Manoa valleys and the third in the region of Waialua. On the whole, the atmospheric conditions and hygienic conditions were much the same as in the first focus. So far, I have only seen the disease among the Portuguese. Even if there are also some isolated cases among the Chinese, Japanese, and Hawaiians, who live in the same conditions as the Portuguese, their occurrence is decidedly more infrequent. The Portuguese do not come from Portugal, but from the African islands, especially Madeira and the Azores; and the parasites were most likely imported from there, although the malady has not been reported in that locale. This does not tell us much, however, because *Ancylostomiasis* has generally remained undiagnosed for a long time in most of the places where it occurs. It has recently been found in Ceylon. In an older paper by Virchow (“Aerztliche Praxis in dem Troas [Asia Minor],” *Virchows Archiv*, v.77, n.LXXVII, p.174ff), a morbid case from ancient Troy is described, which must be interpreted as a characteristic case of ancylostomiasis. This case also supports my view that *Ancylostoma* also occurs in the (apparently immune) warmer countries.

The cases of ancylostomiasis that I have observed here – sixty altogether, of which only six from Oahu – reproduced my findings in Brazil (see *Volksmanns Klinische Vortraege*, fasc. 255, 256, and 265). This time, I treated patients preferably with *Extr. Fil.* Maris, of which I had on hand a good-quality preparation from Merck. Although I have always prescribed a 6-8 gram dose for adults (not much more than this can be used without risk), only rarely did one treatment suffice. On the whole, this substance did not perform any better than thymol. Dispensing the medicine in gelatious capsules did not present any problems.

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1 “Medical practice in Troy”, Virchow’s Archive. In 1846, Rudolf Virchow (1821-1902) and Benno Ernst Heinrich Reinhardt (1819-52) founded the *Archiv für pathologische Anatomie und Physiologie und für klinische Medizin* (Archives on pathological anatomy and physiology and on clinical medicine), which became known for short as *Virchows Archiv* after Reinhardt passed away in 1852. [E.N.]

2 Volksmann’s clinical conferences. [T.N.]
Unfortunately, I was almost wholly dependent on my private practice for helminthological observations. Consequently, I had scant opportunity to look for parasites in Chinese and Japanese, possibly imported from Asia; on the other hand, I was able to observe a large number of Kanakas (natives of Hawaii). I am therefore in the position to affirm that *Filaria bancrofti* has so far not been found in the Sandwich Islands, though there is no lack of mosquitoes there and the species that is probably the intermediate host is very abundant. Since Filaria disease occurs on other Polynesian islands (e.g., in Fiji), it is very likely that the parasite will eventually establish itself here. None of the Asiatic species of *Distomum* have been found in human beings hitherto, nor have there been human cases of infection with *Distomum hepaticum*. But the wide dissemination of infected snails in fresh waters that are also used for drinking makes this not at all unlikely.

In domestic animals, *Distomum hepaticum* has been found quite often, as published in details in this journal, whereas *D. lanceolatum* seems absent. *Echinococcus* is sometimes found in slaughtered animals, but there have been no reported cases of human victims. *Selerostomum armatum* occurs in horses, and in one locality it is highly lethal. *Filaria papillosa* has also been observed there. Incidentally, it should be mentioned that glanders has also been introduced, whereas anthrax most likely has not and canine rabies certainly does not occur. Furthermore, in some places cattle have frequently presented strange chronic abscesses, mostly located in the liver, containing cheesy pus inside a thick pyogenic membrane. This may be a new disease.

As to other parasites, I would also like to mention the occurrence of *Echinorhynchus campanulatus*, of which I once found a large number in a rat of the species *Mus. decumanus*. According to Grassi and Calandruccio, this is an elective parasite of man. *Cysticercus taeniae crassicollis* was also observed in *Mus. decumanus*.

I repeatedly found helminthes in marine fish, but for the most part they were not sexually mature forms. Consequently, I shall only mention the species *Distomum clavatum*, of which I found two specimens in the stomach of a *Coryphaena hippuria*.

This brings me to the end of this short note, which is by no means complete. Most particularly, I had no opportunity to examine aquatic birds, which are quite abundant and would probably have much of interest to reveal.

Sent from San Francisco, November 24, 1892.