

commanding officers of troops in and about Manila and as the result of it we have secured many more volunteers than we need, and have therefore had to refuse a large number. Thus we have been enabled to continue our researches regarding the etiology of dengue, and as soon as they are completed, we will submit a detailed report of the results obtained.

CONCLUSION.

From the work which has already been accomplished, and that which we have in view, we hope to be able to demonstrate the following concerning the etiology of dengue fever:

1. That the cause of dengue is present in the blood of the infected individual, as the intravenous inoculation of healthy men with blood from a patient suffering from dengue is followed by a typical attack of the disease.
2. That the organism causing the disease is probably ultramicroscopic in size, as the inoculation of infected blood into healthy men after it has been passed through a filter which retains the smallest known organism, produces a typical attack of dengue.
3. That the incubation period is four days whether filtered or unfiltered blood be used in inoculation.
4. That the disease is not contagious.
5. That dengue is transmitted by at least one species of mosquito (*Culex fatigans*), as proven by experiment.

Clinical Notes

ANGUILLULA ACETI (VINEGAR EEL) IN THE URINE.

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It is certainly uncommon for the *Anguillula aceti* to enter the human bladder, yet there is at present sufficient evidence to show that such infection may occur. Stiles and Frankland¹ report the case of a young female in whose urine great numbers of the *Anguillula aceti* were found. These writers obtained the urine by catheterization and in this way proved conclusively that the *A. aceti* came from the bladder. Stiles has given rules for the determination of this nematode, but since the vinegar eel can be readily obtained from cider vinegar for comparative study I have omitted its zoologic characteristics.

In 1902 Billings and Miller² reported their findings of the *A. aceti* in the urine from two patients; one a young female, and in the other the sex is not mentioned. These writers do not state that they obtained the urine by catheterization, which permits of a possible extraneous contamination of such urines, although in one of their cases repeated examinations showed the urine to contain these nematodes. Both patients suffered from acute cystitis and one from hematuria.

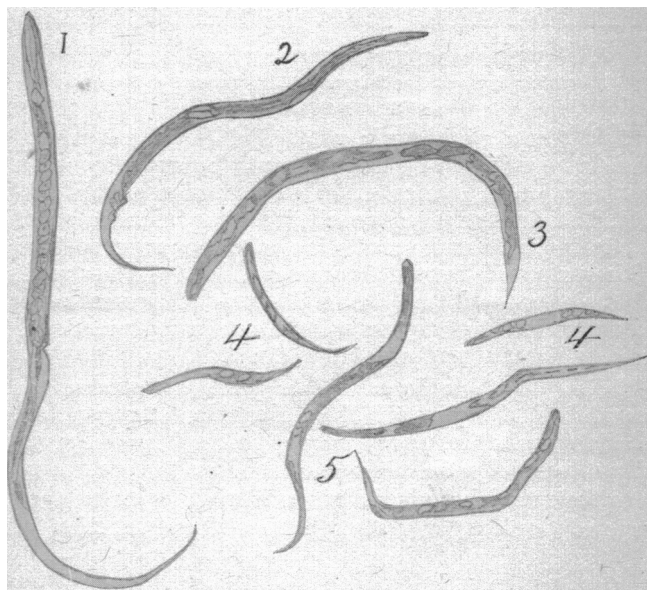
Sheiber,³ in 1880, reported finding repeatedly nematodes in the urine of a woman, but regarded the parasite in question as probably the *A. stercoralis*. His report closely compares with my own observations since the

symptoms of cystitis subsided, and the nematodes were absent from the urine after repeatedly washing the bladder. Thayer⁴ describes two cases where round worms were found in the urine, but in neither instance were they determined to be the *A. aceti*. Strong⁵ has also discussed at length the question of infection of the bladder with round worms. I have reported two instances⁶ where hematuria followed infection of the bladder by the *Rhabditis genitalis*.

During the past nine years there have been examined microscopically, by me or my assistants, both at my private laboratory, and at the laboratory of the Medico-Chirurgical Hospital, the Pennsylvania Hospital, and the Philadelphia Hospital over 17,000 specimens of urine. It is interesting to note in this connection that the *A. aceti* was found but twice (once possibly due to external contamination); the other in urine obtained by catheterization from the male bladder. The *Rhabditis genitalis* was also found twice.

Patient.—Mr. K., aged 52, a coachman, born in Ireland,

Symptoms.—He presented the general symptoms of acute cystitis; on the second day of his trouble there was great burning of the urethra, and an almost constant desire to void urine. Constitutional symptoms were absent.



ANGUILLULA ACETI (Vinegar Eel). 1. Mature female. 2. Mature male. 3. Young worm five days after "vinegar mother" was added to acid urine. 4. Young worms present 48 hours after inoculation. 5. Three days after inoculation of urine. (All forms, one to five, may be present in the urine when voided).

Urinalysis.—The physician in charge handed me a specimen of the urine which on examination gave the following: Color, brownish-yellow; specific gravity 1.020; reaction acid (strongly); albumin and sugar absent; developed on standing, a rather heavy precipitate which formed at the bottom of the liquid.

Microscopically, the sediment showed, in each drop, many specimens of the *A. aceti* which are best described by the accompanying illustration; it also contained many large and small epithelial cells, many leucocytes, few red blood cells, shreds of mucus, and much granular debris. In striking contrast with the microscopic findings of normal urine there was an absence of amorphous urates, and crystalline substances.

In order to avoid possible error that might arise from contamination of the urine after it had been voided, the patient was catheterized at three different times and in the urine thus obtained the *A. aceti* was found.

1. U. S. Bureau of Animal Industry, Bull. 35, p. 35.
2. Amer. Med., May 31, 1902, p. 903.
3. Virchow's Archiv., 1880.

4. Jour. of Exper. Med., Nov. 29, 1901.
5. Johns Hopkins Hosp. Rep., x.
6. Amer. Med., Jan. 3, 1903, 20.

The symptoms of cystitis ameliorated decidedly after washing the bladder with a solution of boracic acid, and after three daily applications of this treatment it was impossible to detect the *A. aceti* in the urine.

At the suggestion of my assistant, Dr. J. Hamilton Small, I obtained a specimen of urine from this patient's wife and to my surprise found it to contain the *A. aceti*. On questioning Mrs. K., I learned that she had been using vaginal injections, to each of which she had added a small quantity of vinegar, with the object of preventing conception. I was not permitted to catheterize Mrs. K., although at this time she too suffered from the symptoms of acute cystitis.

Among the five reported cases of infection of the bladder by the *A. aceti*, four of them presented the symptoms of acute cystitis, and in three hematuria was an early symptom. Albuminuria, when present, was due to an admixture of blood. In all the reports examined the symptoms of cystitis have subsided with the disappearance of the *A. aceti* from the urine, and in all, the course, while acute, was of short duration.

COMPLETE REMOVAL OF FAUCIAL TONSILS.*

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Aside from a broader knowledge of detail that results from a repetition of facts, it would be superfluous on this occasion to give an extended discussion of this subject, but, inasmuch as unanimity of opinion does not obtain throughout the profession as to the proper method of treatment of diseased faucial tonsils and the best mode of their removal, and being desirous of presenting a method which has proven satisfactory in my practice, I wish to direct attention to the following facts.

Owing to their intermediate position between the mouth and pharynx and their glandular structure, the faucial tonsils frequently become infected and chronically diseased by the passage of food or foreign matter into the ramifying glandular ducts which open on their exposed surface, and after a time their function of

tive measures in the form of gargles, sprays and applications to the distended ducts constitute the rational course of treatment. If there be a broad and devious path that leads to disappointment, both to the patient and attending physician, the above procedure which attacks the disease only superficially, or a partial removal of the tonsils, certainly points the way. On the contrary, however, a total extirpation of the tonsillar tissue offers naught but an ultimate cessation of both local and systemic derangements, and no one more fully appreciates this fact than I who was compelled to undergo operations by three different laryngologists before the tonsils were completely removed and a train of distressing symptoms permanently relieved.

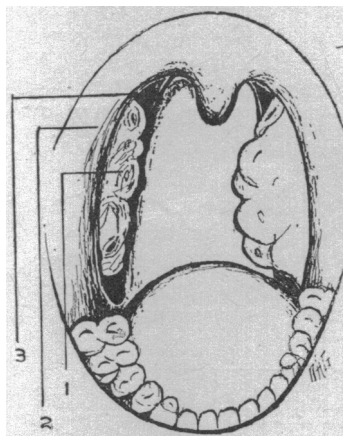


Fig. 2.—Enlarged Lacunar Tonsils.

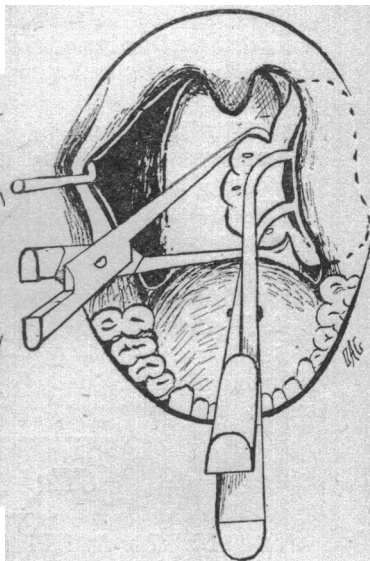


Fig. 3.—Separating anterior pillar.

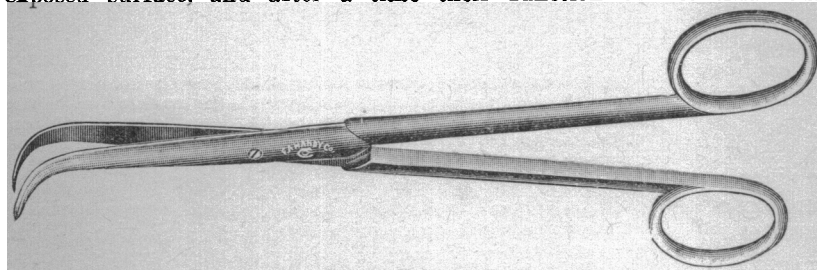


Fig. 1.—Dr. Griffin's tonsil scissors.

pharyngeal lubrication becomes so perverted that the ducts and glands finally become distended and indurated by the retention of a caseated secretion, composed mostly of desquamated epithelium, leucocytes and micro-organisms. The resulting ptomains of decomposition permeate the surrounding lymphatic system, leading to chronic inflammation of adjacent pharyngeal structures and often evidencing its systemic effect by the production of rheumatic symptoms.

Under these circumstances it would seem that only one method of treatment would be considered, but a perusal of many books on the subject indicates that pallia-

In common with the experience of fellow-laryngologists, I realized that with the armamentarium which obtained until a few years ago it was impossible to effect a complete operation until an instrument was devised whereby the adherent pillars could be separated from the tonsillar tissue, preliminary to its removal, especially when the tonsils were submerged. Thus it was, and still obtains in the practice of the unskilled, that in a majority of the cases there was a "recurrence" of tonsils, or, as the laity put it, "the tonsils grew in again," while the unfortunate sufferer experienced little or no improvement in his condition. To the informed, however, it is evident that the faucial tonsils do not recur after complete removal, and that the return of former symptoms is due

to a retention of some of the originally diseased tissue. How often in advising a removal of tonsils for the correction of a pharyngeal or aural disorder have I witnessed that expression of mingled surprise and disgust as the unfortunate patient replied, "Why, I had my tonsils removed by Dr. Blank and he charged me \$10." Thus it was, prior to a few years past, that the operation was regarded by both the laity and general practitioner as a simple procedure which any one could perform, but with improved instrumentation and details of technic the complete removal of tonsils is now justly regarded as a serious and exacting operation which demands as much dexterity and skill as any major procedure to

* Read before the American Academy of Ophthalmology and Oto-laryngology, Aug. 31, 1906.