infection occurred in this country or before her immigration from Finland.

A question which is at once suggested by these cases is whether the general freedom from the broad tapeworm enjoyed by native Americans is to be regarded as evidence of the absence of the species from our fauna or whether such freedom should be credited chiefly or solely to the American methods of preparing fish for food being such as to destroy any larvæ which they may harbor. For the production of infection it is necessary both that the fish eaten shall contain the larval worms and that it shall be eaten uncooked or only partially cooked. The American methods of preparing fish for food make it possible therefore to have infected fish and yet no resulting infection of man. In fact, larvæ of *Dibothriocephalus* do occur in American fishes. I have obtained them from fish caught in the Great Lakes, but without feeding experiments to rear the adult worm from the larva it is impossible to determine the species of *Dibothriocephalus* and the probability is in favor of such larvæ being of some species other than *latus*—the parasite of man.

It is, however, naturally impossible that there shall be larval worms in American fish without the presence also of the adult worm living in the vicinity in its definitive host. So far as we know the adult *Dibothriocephalus latus* is extremely rare in man in America generally, and there are no reports of its being found in American dogs, cats or foxes—the other animals which are known to serve as definitive hosts for the parasite. Unless the adult worm is much more common than we have reason to believe we can not expect the larvæ to occur at all abundantly or generally in American fish. The dearth of American reports regarding cases of parasitism both of man and animals leaves room for much uncertainty in regard to the accuracy of any such general conclusion as this, however, and we are by no means justified in denying the possibility that the species may be autochthonous in this country and as widely distributed as it is in Europe. On the whole, however, I regard it as much more probable that a merely local infection of the fishes has occurred resulting from the discharge into some of the lakes near Ely of feces from some imported case of *Dibothriocephalus latus* infection. That such infection should have occurred is not surprising in view of the large Finnish population of the region, the frequency of tapeworm infection among the Finns, the fact that the sewage from the town is discharged into a lake, and the large number of species of European fish which are subject to infection by the larval worms. It is unfortunate that the stringent regulations adopted by the government to prevent the introduction of objectionable species of animals and plants are by the nature of the case not capable of enforcement against intestinal parasites.

It is also to be regretted that cases of infection by intestinal parasites are not generally reported by the physicians under whose observation they come so that they become a matter of permanent record available for statistical purposes. Although the accurate determination of the species often requires an amount of technical zoological knowledge which the physician does not have at his command, this only makes it so much more important that the specimens should be preserved and sent to some center where positive determinations can be made and recorded.⁵ If medical practitioners generally could

be induced to do this it would be the means of accumulating much useful knowledge concerning animal parasitism in this country, a subject that has heretofore received far too little attention from physicians. We need to know more fully what human parasites occur in America, their frequency, their regional distribution, the sources of infection and the pathologic effects which they produce. Every case accurately determined and put on record is a contribution toward this end.

Now that it is shown that infection of American fish by the larvæ of *Dibothriocephalus* is possible and has occurred locally, it is important that all possible measures shall be taken to prevent the infection from becoming widespread. To this end the physician's influence should be exerted wherever necessary to prevent the eating of fish food not thoroughly cooked and to prevent the feeding of raw fish to domestic animals. Where a case of infection by the broad tapeworm is known to exist the thorough disinfection of all fecal discharges should be carried out to prevent the possibility of living eggs being carried into any stream or lake. In cases of *Dibothriocephalus* infection all possible data should be gotten which may tend to show where the infection was acquired.

INSANITY AS A RESULT OF HYSTEROTOMY AND OÖPHORECTOMY.*

GRAEME M. HAMMOND, M.D., LL.B.
NEW YORK.

Gynecologists have generally accepted the hypothesis that the ovaries influence the development of the brain and that their removal is generally followed by consequences disastrous to that organ. Many things have contributed to this opinion. In a great many cases insanities do follow operations for the removal of the pelvic organs. Dudley¹ voiced the opinion of gynecologists when he said: "It would seem as if the ovaries, and probably the testicles, add something to the system which is necessary for the individual's complete development, and by removing the ovaries or testicles you deprive the system of something that causes a perversion of nutrition."

Again, it is the belief that the early removal of the ovaries and testicles causes changes in character in man and in the lower animals. This is true in so far as the sexual instinct is obliterated, and as the sexual instinct profoundly influences the course of life, such as, for instance, the maternal and paternal instincts, the desires for pleasing the opposite sex and the battling with the world with the object of gaining a home, wife and children, the individual is changed to that extent, but there is nothing to show that the early removal of the generative organs in either sex diminishes mental vigor, intellectuality, or is conducive to insanity or to mental degeneration. The doctrine that the ovaries secrete some substance necessary for the preservation of the integrity of the brain will not, of course, hold good for the uterus, and it is well known that the same psychoses which follow operations on one follow operations on the other. Disease of the ovaries, which gradually destroy their function, is rarely followed by insanity, but the operation for the removal of the diseased and destroyed ovaries is often followed by mental disease.

Against the theory that the ovaries are necessary for the preservation of the mental faculties is the fact that

5. I will undertake willingly to receive specimens of human intestinal parasites from physicians in Minnesota and adjacent states for determination. All specimens should be carefully preserved, and as full data as possible should be sent with them.

* Read before the New York Psychiatric Society.

1. A. Palmer Dudley: "The Trend of Gynecologic Work To-day," THE JOURNAL A. M. A., Dec. 12, 1903, vol. xli.

many operations of a major kind are not followed by insanity at all. The fact that many women go through the menopause without mental symptoms can not be urged as an argument either way, because, though the ovaries cease to ovulate after the menopause, they might still secrete some substance beneficial to the nervous system. Insanity may follow any operation.

Piqué and Briaud² state that all the surgeons taking part in the discussion of the Société de Chirurgie in 1898 were unanimous in the conclusion that operations on the female genital organs did not predispose to psychoses any more than other operations did. Previous to this, in 1891, the surgeons who took part in the discussion of the Congrès de Chirurgie reached the same conclusion. In this Piqué and Briaud agree. I am not prepared to accept this view of the subject. I believe that insanity does follow more frequently from operations on the pelvic organs than from any other operation. There are reasons for this to which I will refer later.

The forms of insanity which follow operations on the pelvic organs are, first, the toxic insanities. These psychoses have no place in this article because they are caused by toxemia and, therefore, have no direct relationship to the removal of the pelvic organs.

The organic insanities are paranoia, melancholia, presenile delusional insanity, periodic erotic mania and paresis. Paranoia, of course, is not caused by any operation. The individual is born a paranoiac, the operation simply hastening the development of a disease ready to exhibit itself under suitable conditions. Nor can paresis be regarded properly as a postoperative psychosis. The syphilitic basis must be present in this disease. The operation with its exhaustive consequences simply develops a disease already present.

The causes for insanity, following operations on the pelvic organs, are, first of all, heredity and congenitally defective brains. I do not believe it is possible for any psychosis to develop after any operation on the pelvic organs in a healthy brain.

The psychologic causes are not by any means unimportant—the fear of death from the operation, disappointment at not being able to bear children, and the consequent curbing of the maternal instinct, the fear of the loss of the husband's love, the fear of becoming cold and indifferent to the husband, and the fear of acquired masculinity—all exert a powerfully depressing effect on the mind, and contribute, in a brain predisposed to insanity, a great influence in developing psychoses.

Such physical causes as anemia, neurasthenia and the breaking down of the general health from long-continued disease, also influence a tendency to the development of a psychosis. In almost all cases the patient has suffered for months and even for years from an exhaustive disease before operative procedures are advised, and this exhaustion and malnutrition is certainly influential as a causative factor in insanity. Surgical shock is by no means an unimportant cause.

My position on this subject is that the ovaries and uterus have nothing to do with the preservation of the integrity of the brain, and that their removal alone never causes insanity; that the insanities which follow operations on these organs depend on a hereditary tendency to insanity, the psychologic causes and the physical causes, and the surgical shock already referred to, but that the principal cause of all is the congenitally defective brain.

THE NAUHEIM BATHS AND TREATMENT OF HEART DISEASES.

G. WACHENFELD, M.D.

Sanitätsrat.

BAD-NAUHEIM, GERMANY.

During my stay in the United States an article by Dr. J. M. Anders¹ of Philadelphia on the action of the Nauheim cure attracted my attention. I deem it my duty to say a few words in reply to his statements, both in the interest of Nauheim and of Americans suffering from heart diseases who are unable to visit Nauheim for relief.

Those not acquainted with Nauheim and the prevailing conditions who read these statements must be led to the conclusion that it is a generally accepted practice at the place to treat heart disease with gymnastic exercises. This is by no means the case. The fact is that out of fifty physicians practicing in Nauheim the Schott treatment is solely applied by Professor Schott. A number of the Nauheim colleagues still occasionally permit the patients to exercise with the Zanders apparatus, but not until the muscles of the heart have been sufficiently strengthened by the bath treatment, which means near the termination of the cure. Then they apply preferably apparatus which produce passive movements, and particularly movements which tend to induce deep breathing without the least active exertion on the part of the patient, thereby not causing overworking of the heart. The number of physicians who reject even these apparatus is considerable. They rely mainly on the baths; prescribe all the rest possible and try with the aid of additional means, such as massage, diet, etc., to unburden the heart. During the last season over 26,000 people came to Nauheim to take the bath treatment. Of this number certainly by far the majority were not treated by the Schott method. In spite of the absence of this treatment, the results have been, to say the least, equally as good. Therefore, I am fully justified in the assertion that Dr. Anders has given the gymnastic treatment an importance to which it has absolutely no claim. To attribute recovery from diseases of the heart in Nauheim to the exercises is absurd; it is the Nauheim baths, plain and simple, which constitute the essential curative factor. Before entering more specifically on the bath treatment I wish to explain why I could not—without harm to the interest of patients not able to visit Nauheim—allow the misleading statements of Dr. Anders to remain unchallenged.

Frequently during my stay in the United States I have had the opportunity to discuss with my American colleagues the treatment of heart diseases in general. Invariably I have been informed that heart patients were subjected to gymnastic exercises, and in many instances I was referred to articles on this subject published by Schott, Thorne and other authors, and more than once my attention was drawn to Dr. Anders' paper. I was repeatedly assured that following gymnastics the area of dullness was diminished and the pulse rate reduced. But does that actually prove anything for the efficiency of gymnastics? I hardly think it does. On the contrary, I consider gymnastic exercises in most cases of heart diseases, especially myocarditis, under all circumstances very dangerous. Gymnastics are not without danger in any case, because in all cases of heart diseases the myocarditis is more or less affected, too. It is the more dangerous where the neutralizing

2. Piqué and Briaud: "Études de psychoses postopératoires," Arch. de Neurol., Second Series, No. 15, 1903.

1. THE JOURNAL A. M. A., Jan. 14, 1905, p. 116.