served to convince him of the viciousness of the treatment as given and that the records made by the persons in the employ of the institute were too inadequate to serve as clinical evidence. On the referee's recommendation, the report as originally adopted was reendorsed by the Council and authorized for publication.

W. A. PUCKNER, Secretary.

Maignen Antiseptic Powder is marketed by the "Maignen Institute for the Study of Bacterial Diseases," Philadelphia. It is claimed to be a mixture of calcium hydroxid, sodium carbonate, aluminum sulphate and boric acid, but no statement as to the amount of the several constituents is furnished. Its action depends on the sodium hydroxid which is formed when the powder is treated with water, 1 Gm. of the powder as now submitted to the Council yielding 0.32 Gm. of sodium hydroxid (NaOH) and a specimen obtained a year ago yielding 0.28 Gm. Its promiscuous use is recommended both to physicians and to the public with claims which are extravagant, preposterous and even dangerous.

A pamphlet, clearly intended for the laity, entitled "What Is Catarrh?" gives direction for the "sterilization" of the nose, throat, stomach, lungs, eyes, gums, mouth and the genito-urinary tract. The following, taken from this pamphlet, illustrates the absurdity of the claims made for Maignen Antiseptic Powder:

"STERILIZATION OF THE STOMACH"

"TAKE of the Maignen Antiseptic Powder half the quantity raised on a dime, scant.

"ADD to a tumbler of water, preferably warm, and stir.

"DRINK SLOWLY.

"THIS IS WHAT MAY HAPPEN:

"(1). Belching may be the first indication of the sterilization of the stomach.

"(2). The excess of acidity is corrected.

"(3). The fermentation is stopped.

"(4). The sterilization extends to the Intestinal Tract.

"(5). The bowels are regulated without purgation.

"(6). The whole metabolic process is improved.

"WHEN AND HOW OFTEN TO DRINK THE ANTISEPTIC SOLUTION.

"(a). For Indigestion, whenever distressed, before or after meals.

"(b). For Constipation, half an hour before breakfast or last thing at night.

"(c). For Gastro-Intestinal troubles, such as Typhoid Fever, Dysentery and Cholera, which are the most serious forms of catarrhal inflammation, take half a tumbler or a whole tumbler of hot water with half the quantity of Powder raised on a dime every hour, and between times a glass of generous [sic] wine.

"REMARKS"

"The sterilization recommended here is a plain disinfecting process which does not interfere with medical treatment. It is, on the contrary, of great assistance to it.

"It has been found very effective in breaking up the cigarette habit. It does away with the craving by removing the morbid irritation of the mucous membrane."

Eighty-eight disorders are listed in a pamphlet entitled "Antiseptic Therapeutics" all of which are reported as having been treated with success. The dangerous character of the Maignen "sterilization" propaganda is illustrated by a pamphlet "First Aid to Baby-Sick" and by the recommendation on the trade package:

"To prevent Blood Poisoning, Lockjaw, Hydrophobia and Infectious Diseases."

The legend on the trade package and the advertising matter contained in it are likely to lead the public to place dependence on a weak sodium hydroxid solution as a means of preventing blood-poison, lockjaw, hydrophobia and infectious diseases. The pamphlet "First Aid to Baby-Sick" recommends its use in sore eyes, teething and sore mouth, sore throat, running ears, running nose, sore chest, summer complaint, skin troubles and infection after vaccination; if any trust is put in these claims, they are bound to lead to the sacrifice of many infants through neglect of proper treatment.

Patent No. 1,086,339 has been granted on this powder to P. J. A. Maignen of Philadelphia by the U. S. patent office on the following specification of claim made in the application:

"1. A process for destroying microorganisms on living tissue, without injuring the latter . . . whereby the growth of such organisms is inhibited and their substance dissolved without deleterious effect upon contiguous healthy tissue."

With brazen assurance this grant has been twisted by the unscrupulous promoters into a government endorsement of the preparation. It, of course, means nothing of the sort, as, no doubt, in accordance with legal routine the patent was granted without any investigation by the patent office to determine the effectiveness of the powder for the purpose claimed.

In view of the dangerous, unwarranted and absurd claims made for Maignen Antiseptic Powder the referee recommends that it be refused recognition, and that the Council declare its agreement with views expressed in the article "Maignen Pulv." published in THE JOURNAL, Feb. 15, 1913, p. 537, particularly the following:

"The germicidal powers of strong alkalis have long been known, but the inconvenience of their application to tissues and mucous membranes has prevented their use. That they will be of service when sufficiently diluted not to irritate the tissues is improbable, for the antiseptic power of such solution is slight and the disinfectant value practically nil."

Because the Maignen Institute has twisted the granting of U. S. patent No. 1,086,339 into a quasi-endorsement of the claims made for Maignen Antiseptic Powder it is recommended that a copy of this report be sent to the Commissioner of Patents as a protest against the present law, which authorizes the granting of patents on unproved and improbable medical claims.

Correspondence

Unauthorized Insertion of Advertisement

To the Editor:—I notice the regular Kenilworth Sanitarium advertisement displayed in the October number of *American Medicine*, and I would thank you to put this note in THE JOURNAL of the American Medical Association, in order that the medical profession may be informed that the insertion of said advertisement was entirely unauthorized.

SANGER BROWN, M.D., Kenilworth, Ill.

Chief of Medical Staff, Kenilworth Sanitarium.

[COMMENT.—The foregoing may explain how it sometimes happens that clean, ethical advertisements appear in publications whose principal income is derived from nostrum and fake advertisements.—ED.]

The Metchnikoff Theory

To the Editor:—The theory, so ably supported by Metchnikoff, which ascribes to the leukocytes the function of picking up and destroying bacteria which find their way into the blood or tissues (phagocytosis) is now generally accepted as having been demonstrated by observation and experimental evidence.

I have no desire to detract from the credit due to Metchnikoff in connection with this theory, but in justice to myself desire to call attention to the fact that this theory was suggested by me several years before the publication of Metchnikoff's first paper on the subject. In support of this statement, I quote from my book entitled "Bacteria," published in 1884 (William Wood & Co., New York), pp. 250 and 251:

"If we add a small quantity of culture-fluid containing the bacteria of putrefaction to the blood of an animal, withdrawn from the circulation into a proper receptacle, and maintained in a culture-oven at blood-heat, we will find that these bacteria multiply abundantly, and evidence of putrefactive decomposition will soon be perceived. But, if we inject a like quantity of the culture-fluid with its contained bacteria into the circulation of a living animal, not only does no increase and no putrefactive change occur, but the bacteria introduced quickly disappear, and at the end of an hour or two the most careful microscopical examination will not reveal the presence of a single bacterium. This difference we ascribe to the vital properties of the fluid as contained in the vessels of a living animal; and it seems probable that the little masses of protoplasm known as white blood corpuscles are the essential histological elements of the fluid, so far as any manifestation of vitality is concerned.

"The writer has elsewhere suggested that the disappearance of the bacteria from the circulation, in the experiment above referred to, may be effected by the white corpuscles, which, it is well known, pick up, after the manner of amoebae, any particles, organic or inorganic, which come in their way. And it requires no great stretch of credulity to believe that they may, like an amoeba, digest and assimilate the protoplasm of the captured bacterium, thus putting an end to the possibility of its doing any harm.

"In the case of a pathogenic organism we may imagine that, when captured in this way, it may share a like fate if the captor is not paralyzed by some potent poison evolved by it, or overwhelmed by its superior vigor and rapid multiplication. In the latter event, the active career of our conservative white corpuscle would be quickly terminated, and its protoplasm would serve as food for the enemy. It is evident that in a contest of this kind the balance of power would depend on circumstances relating to the INHERITED vital characteristics of the invading parasite and of the invaded leucocyte."

It seems to me that the theory of phagocytosis is very clearly stated in the foregoing quotation, although the term "phagocyte" had not yet been suggested.

The book from which the quotation is made was published in the spring of 1884, but it was written in 1883 and the preface, written last, is dated Aug. 15, 1883. The statement that "the writer has elsewhere suggested that the disappearance of the bacteria from the circulation in the experiment above referred to may be effected by the white corpuscles" is supported by the following quotation from a paper read at the Cincinnati meeting of the American Association for the Advancement of Science, Aug. 18, 1881:

"It has occurred to me that possibly the white corpuscles may have the office of picking up and digesting bacterial organisms which by any means find their way into the blood. The propensity exhibited by the leukocytes for picking up inorganic granules is well known, and that they may be able not only to pick up but to assimilate, and so dispose of, bacteria which come in their way does not seem to me very improbable in view of the fact that amoebae, which they resemble so closely, feed on bacteria and similar organisms" (*Tr. A. A. S. for 1881*, p. 175).

The paper from which this quotation is made is entitled "A Contribution to the Study of the Bacterial Organisms Commonly Found on Exposed Mucous Surfaces and in the Alimentary Canal of Healthy Individuals. Illustrated by Photo-Micrographs. By George M. Sternberg, Surgeon U. S. Army, late 'Fellow by Courtesy' of the Johns Hopkins University. With Plates XI, XII and XIII."

The first record I can find of Metchnikoff's announcement of the theory of phagocytosis is in his paper in *Virchows Archiv*, 1884, xcvi, 177, "Ueber eine Sprosspilzkrankheit der Daphnien."

GEORGE M. STERNBERG, M.D., Washington, D. C.

"Flying Clinics" in the Medical Treatment of Rural School-children.—Dr. A. E. Williams describes in the *Journal of State Medicine* for October some of the measures employed in the medical treatment of schoolchildren in Great Britain. In thinly populated rural districts facilities for remedying many defects found among the children are lacking. Although the children of the rural districts are, as a rule, healthier and stronger than those in more thickly populated districts, it became necessary to devise some special measures for treating defective vision, dental caries, etc. For this purpose, "flying clinics" were established. For the flying eye clinic, a portable apparatus was devised, consisting of a small tent of dark material for a dark room, an ophthalmic lamp and a case of trial lenses. For dental defects, both flying clinics, working from school to school throughout a county, and clinics at a fixed center to which all the children in the given county were sent, were employed. Dr. Williams says it is now proved that flying clinics are both practical and useful, the cost being not great. He believes that the time is not far distant when these clinics will be looked on as an essential feature in every scheme of medical inspection.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

THE PRICE OF RADIUM ACTIVATORS

To the Editor:—The treatment of disease by radium emanations is being urged on the medical profession by interested purveyors of apparatus for producing these emanations. There is a certain mystery with reference to radium which, combined with its high price, leads the physician readily to accept the prices charged for these activators. Thus, one of the most widely advertised activators is priced at \$200 for an apparatus which will produce 2,500 Mache units per day in $\frac{1}{2}$ liter of water. Another firm advertises a similar apparatus at a price of \$165. Still another firm claims to produce an apparatus of equal capacity for \$15.

Being interested in this subject, I wrote to several companies asking prices and particularly the amount of radium which is necessary to produce this quantity of emanation. To the first firm I wrote as follows:

"Please quote me the price of a — — — activator capable of furnishing 2,500 Mache units per day. Will you kindly indicate to me the approximate amount of radium that is necessary to produce this strength of radium emanation?"

With reference to the amount of radium necessary, the reply of this firm is somewhat evasive:

"In answer to your question as to the approximate amount of radium required to produce a desired strength of emanation, we beg to reply that this depends entirely upon which salt of radium you use, its concentration and how you use it. Its full emanation is available when a soluble salt, as bromide or a chloride is dissolved in water, but this is only temporary, as its strong affinity for other salts soon causes it to precipitate, even attacking the silica of the glass; the emanation is then greatly reduced—in instances we have known it to fall within 2.5 per cent. of its original amount. If an insoluble salt like the sulphate or the carbonate be used, you can generally obtain from 5 to 8 and sometimes even 10 per cent. of its available emanation. Unless you are thoroughly familiar with radium, we would not advise you to attempt constructing your own apparatus, because in the end you would undoubtedly lose a considerable proportion of your radium, and the result would be much more expensive than if you purchased an activator at the start."

Of course, it is well known that the different radium salts differ in their radium activity, but it would have been no great task for the firm to indicate the amount of some one salt or of radium element.

To the second company I wrote as follows:

"Do you furnish an activator for producing radium emanations? If so, please quote me the price of an apparatus capable of producing a solution containing 2,500 Mache units per day. Would you kindly tell me the approximate amount of radium necessary for the production of a water containing 2,500 Mache units per day?"

In reply to this query, I received the following letter:

"In answer to your inquiry in your letter of September 25, we are obliged to advise that we cannot supply an apparatus for the production of so small an amount of radium emanation as 2,500 Mache units per day. The amount of radium necessary for the production of a water containing 2,500 Mache units per day would be 0.01 mg. of radium element."

The third firm advertises an apparatus at the low price of \$15, but says in its letter:

"The price of our No. — — — is \$25. This we guarantee to generate 2,700 Mache units. This guaranty is based on a generating capacity of from 500 to 1,000 Mache units more than the rating. The reason for this is that the emanation is three times as soluble in air as it is in water, and in spite of careful handling, a certain amount of the emanation will be lost."

In view of these varying prices, it is pertinent to ask, What is the reason for this enormous excess charged beyond the value of the radium contained? One one-hundredth mg. of radium element is worth approximately \$1.25. If this is the value of the radium contained in the apparatus, is it possible that bottles and containers are worth from \$164 to \$199? A similar disparity between charges and value appears in the price for rental of these pieces of apparatus. Thus, the apparatus costing \$200 rents for \$80 for a period of six months. Is it possible that the credit of physicians is so poor that they must pay such enormous prices? Even the cheap apparatus costing \$15 is rented for \$22.50 for a period of six months.

I would be much interested in any comments which you may see fit to make on this situation.

J. H. S.

ANSWER.—In reply to the first question, regarding the amount of radium necessary to produce 2,500 Mache units of emanation daily, it may be said that the total amount of emanation from 1 microgram (that is one millionth of a gram) of radium (element) will correspond to 2,700 Mache units. The total amount of emanation produced by a given amount of radium is that which is obtained from material that has been kept in a sealed vessel for six weeks or more. If all emanation is removed from a sample of radium at the start, then at the end of twenty-four hours only about one-sixth of the maximum amount of emanation will have accumulated. If all of the emanation produced were effective, then it would require 6 micrograms of radium to yield 2,700