psychology, as applied to the practice of medicine, and the main point I always emphasize is that mental influences are not to be used in a haphazard way. Psychology, just as is physiology, is a real science and a very important one for us to apply. Let the intelligent physician insist that its importance shall be recognized in our medical schools. The patient has not only a body, but also a mind, and we should not attempt to separate them. The daily newspapers and even the high-class magazines do much toward spreading broadcast the seeds of mental disease among the laity. The physicians should recognize the value of mental influences, and when a patient is in need of such treatment, he should receive the best possible from a regular physician, and not be turned over to the quack and charlatan. It is not necessary to resort to deception. You can do everything you wish and still be perfectly honest. Of course, the use of proper drugs is not to be neglected, but in my paper I purposely emphasized the importance of mental treatment. I think that anyone who has used the method referred to in treating hysterical paroxysms will appreciate its value. Just tell your patient that when the premonitory symptoms come on, he should not forget your instructions, but inspire deeply and slowly in order to avert the attack. Then if the voluntary muscles are tense, they should be relaxed. Of course, the general hysterical condition must also be treated, but mental influences are the essential factors in overcoming this condition.

PULP HYPERTROPHY OF THE TEETH.*

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I was first led to the histologic examination of pulp hypertrophy by the desire to find the conditions of the nerve supply in this so highly-altered pathologic tissue; in the study of the nerves I found not only what I expected—partly complete absence of nerves and partly marked decrease of nerve fibers, thus explaining the great difference in sensitiveness—but also some other very interesting discoveries which I believe are new.

Pulp hypertrophy is to be considered as a new tissue formation due to chronic pulpitis from exposure through more or less complete destruction of the overlying protective tissues. This new growth consists of a comparatively coarse granulation tissue in which three layers can be distinguished. The outer layer consists of a thick stratum of white blood or pus corpuscles beginning to break down, then follows a somewhat wider zone consisting of a proliferation of endothelial cells and capillary vessels, which, seen with a less magnifying power, has almost the appearance of granular layer, similar to that before described in the so-called endothelial granuloma of the dental root. The third layer, which forms the chief mass of the tumor, consists of a coarse, connective tissue with dilated blood vessels interspersed with crowded round cells.

Up to the present I have studied about 30 different specimens mostly obtained in clinics, but for part of which I have to thank my colleagues. I have prepared them in the following manner:

First, I placed the whole tooth with the pulp *in situ* in a 10 per cent. formalin solution, then decalcified it in a 33 1/3 per cent. formic acid solution (which is, as a rule, accomplished in two or three weeks), then divided the tooth, together with the hypertrophied pulp, into two nearly equal halves. Of these halves, such as seemed most suited for further treatment for microscopic examination were taken. These were imbedded

in celloidin and cut with the microtome into the thinnest possible layers and then stained partly with alum hematoxylin and picrofuchsin (Van Gieson) and part with Weigert's medullary staining process in which the nerves and their medullary layers appear as dark, blue-colored fibers on a yellowish background.

This shows that in so-called pulp hypertrophy (which arises like a fungus from the pulp chamber and generally fills the carious part crown of the tooth) nerve fibers are absent. In the pulp cavity itself and in the root canals, on the other hand, numerous nerve bundles are found according to the degree of degeneration of the pulp tissue. This degeneration consists in a transformation into granulation tissue, particularly where infiltration with round cells changes into granulation. The nerve fibers are already broken down or beginning to be degenerated, as shown by distortive interruptions and knot-formed swellings of the nerve fiber. Such degenerative processes of the nerves can best be seen in pulps which have been laid open by fracture in attempts at extraction and in which the superficies of the exposed pulp is changed into granulation tissue and pulp hypertrophy.

The study of preparations stained by the Van Gieson methods has convinced me the difference claimed by Rothmund and Arkovy between pulp hypertrophy and pulpitis chronica hypertrophica granulomatosa does not exist. By the pulpitis chronica hypertrophica granulomatosa is understood (according to Rothmund and Arkovy¹) a granulating mass of the pulp from the size of a millet seed to a pea, soft with little consistency and extending over one or two pulp points. The pulp hypertrophy, on the other hand, which Arkovy calls pulpitis chronica sarcomatosa is a compact, dense neoplasm caused by proliferation of the pulp tissues, distinctly limited, generally smooth and only here and there slightly lobular, less vascular, extending over the whole pulp cavity, except perhaps some very slight portion, including the whole crown cavity of the tooth.

I find neither clinically nor histologically any noticeable difference in the two forms. Both forms of hypertrophic pulpitis differ only in their size and agree perfectly in their histologic structure. The fleshy round bean or hazelnut-sized pulp hypertrophy develops simply through its natural growth from the minute millet seed or pea-sized neoplasm. In both cases there is a degeneration of pulp tissue and transformation into a more or less coarse granulation tissue, which consists of connective tissue fibers with numerous blood vessels, round cells and proliferated endothelium and connective tissue cells.

The striking point in all the specimens is the richness of blood supply. The vessels are not only numerous but also dilated, almost like a hemangioma, so that after extraction of the tooth the hypertrophy loses half its volume.

In almost all cases of pulp hypertrophy there is found to some extent the formation of partly attached, partly free, pulp stones and calcareous deposits. This is in itself not astonishing, since in nearly all teeth which suffer from any kind of pulpitis calcic formations are present to the discomfiture of the investigator, and even in well-decalcified preparations they often cause inconvenient nicking of the microtome knife. But what is here remarkable is the fact that in many hypertrophied pulps such calcareous formations occur well above the

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. M. L. Rhein, M. H. Fletcher and Wm. E. Walker.

1. Compare Scheff's Handbuch, vol. xii, p. 297.

pulp chamber and the hypertrophy itself. These calcareous masses or pulp stones are in part round or oval with distinct stratifications and partly irregularly dentated, and show cell inclusions similar to those which are found in the formation of secondary dentin inside the pulp chamber.

How can these things be explained? I believe the pulp hypertrophy only occurs in teeth the pulp elements of which possess great vital energy and capacity for regeneration and in which they can oppose special resistance against incoming bacteria and other morbid influences. If in such teeth from caries the pulp loses its defense (its secondary dentin cover) it is still able to defend itself by forming on its surface granulation tissue in thicker and thicker layers which will have to be called pulp hypertrophy. Even after fracture of the tooth by unfortunate attempts at extraction such pulp hypertrophies can develop, although in such case the pulp is certainly laid bare to a larger extent.

The formation of secondary dentin partly attached to the walls and partly free is to be considered an attempt at defense from external injury. The quicker the pulp is compelled to form secondary dentin the more irregular will be its formation, so the calcification does not follow regular rules and the dentin is not laid down in regular layers, but the pulp cells are included in rapidly-formed irregular dentin structure. Such pulp cells, so over-energetic in dentin formation, may here and there extend with the granulation tissue beyond the pulp chamber itself, and thus far away from their original site form on the crown of the hypertrophy such pulp stones as are shown in some of my specimens.

Some things shown appear at first rather difficult to explain. Thus in one case the surface is covered with regular stratified pavement epithelium instead of the usual round cells and pus corpuscles, also with the high papillae which are typical of the gum tissue. How does this epithelium develop on the pulp? Usually the excised fragment of a pulp hypertrophy is readily distinguished from a corresponding fragment of an alveolar growth by the absence of epithelium. I explain the process as follows: Hypertrophied pulps are frequently ingrafted with alveolar growths, that is, when a pulp hypertrophy extends outside a pulp chamber over the corroded wall of the crown in contact with the gum tissue. Both are easily injured in chewing so that spontaneous autotransplantation from the gum tissue to the pulp hypertrophy occurs. Six months after preparing the one specimen I found another which demonstrated conclusively the truth of this conjecture. I have seen gum tissue grown over the completely destroyed crown of the tooth of which one was united with the broad surface of the pulp hypertrophy in the pulp chamber. The whole surface of this hypertrophy was already covered with epithelium of the same composition and height of papillae as that possessed by the alveolar tissue. Later I had the opportunity to separate the gum overgrowth from the pulp and there remained then only the pulp hypertrophy covered with epithelium.

In conclusion, a few words on the therapy of pulp hypertrophies: In cases where the pulp has one of these growths (they are vascular and at the same time poorly innervated) they may be either simply amputated with a pair of fine scissors or pointed knife in the depth of the pulp chamber and then arsenic paste applied to cause necrosis of the root pulp, or the arsenic paste can be applied direct to the crown of the hypertrophy in order to destroy by necrosis the entire tissue.

But there is no serious error, in my opinion, in avoiding the use of arsenic altogether, but simply cut off the top of the hypertrophy and cap the stump, or in very small hypertrophies after a thorough cleansing cap the hypertrophy as a whole and over this insert a filling or crown. The possibility of decomposition of the capped hypertrophy might be excluded since the tissue has already been shown to possess remarkable resistance.

THE CONTROL OF PROSTITUTION AND THE PREVENTION OF THE SPREAD OF VENEREAL DISEASES.*

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This paper is presented under this double caption because venereal disease and prostitution are inseparable terms, and because the control of prostitution is engrossing the attention of most of the large and many of the smaller communities, solely for the avowed purpose of preventing the spread of venereal diseases. By far the more important of the two questions is that which refers to the prevention of the spread of venereal diseases; whatever preventative measures have thus far been instituted have been largely ineffective in character and have been directed against the chief source of infection, prostitution, with a view of either effecting its suppression or control. History is full of attempts of such manifold nature and character as to conclusively demonstrate that suppression is impossible and control impractical and at best of very doubtful value. I need only refer to a few well-known examples to convince the most skeptical that suppression of prostitution is not feasible. The stern and severe regulations of Maria Theresa, at Vienna, and the popes at Rome, were promptly followed by husbands prostituting their wives, parents their children, and by a rapid and alarming increase of venereal diseases. The history of the city of Bonn conclusively demonstrates that, however severe the measures for the suppression of prostitution may be in character, even to the degree of the infliction of the death penalty on the transgressors, they foster not only rapine, seduction, bastardy and infanticide, but an undue prevalence of venereal disease in its most aggravated form. Yet "prostitution must be regarded as the fountain-head from which venereal diseases originate, and forms the main source of the unbroken vitiated stream of poison, which inoculates the living and contaminates the unborn."¹

Hardly less unfavorable are the measures which, from time to time, have been and continue to be instituted, in most of the larger communities in this and many foreign countries, not for the suppression, but for the control of prostitution. Although measures for its control have been prepared with the greatest care and wisdom, and have been rigidly enforced with the most conscientious and painstaking effort, it is exceedingly questionable, even in the most favored instances, if the resulting good is ever commensurate with the effected harm.

The most efficient and most carefully exercised control, regulating the proper registration of all known prostitutes, their subjection to police surveillance, submission to careful periodic examination, and compulsory hospital treatment when diseased, even though it could

* Read before the Ohio State Medical Society, at Dayton, 1903.
1. Weiss: THE JOURNAL A. M. A., Jan. 24, 1903.