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ORIGINAL CONTRIBUTIONS

ALVEOLAR PYORRHEA.*

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Much in the teachings of our dental text-books and in our periodical literature respecting alveolar pyorrhea is not only unsatisfactory and misleading, but in some respects it is positively harmful; and yet these teachings for lack of something better, have been quite generally accepted as verity by the profession.

Alveolar pyorrhea is a condition of the mouth overburdened with names and the subject of many unmeaning, vapid descriptions.

We are indebted to Prof. C. N. Pierce for some recent researches into the nomenclature of pyorrhea, and for his efforts in awakening a more general interest in the whole subject. Some of the appellations for this condition but few probably of the present generation have seen mentioned; among them Dr. Pierce mentions: "Suppuration Conjointe," "Pyorrhea Interalveolodentaire," "Gingivitis Expulsiva," "Osteo-periostiti-alveolo dentaire," "Pyorrhea Alveolo," "Cemento Periostitis," "Infectioso-alveolitis," "Calcic Inflammation," "Phagedenic Pericementitis," "Rigg's Disease," "Hematogenic Calcic Pericementitis," "Blenorrhea Alveolaris," "Gouty Pericementitis," and others.

We may without appreciable loss, pass over the articles under the above titles, and many others, until we come down to about the years 1892 to 1895, when Dr. Pierce published through the medium of the *Dental Cosmos* a series of papers on pyorrhea, in which he endeavored to make what is called the "gouty diathesis" almost wholly responsible for all expressions of this disorder.

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To the credit of Professor Pierce as an author these articles, revised or rewritten as they appear to have been, for the "American Text Book of Operative Dentistry," have done much of the thinking of dentistry on this important subject, and thus it has come to pass that many untenable theories have become widely accepted in the profession. It is by no means uncommon for the dentist to speak of patients as suffering from "gouty teeth," or from "gout in the teeth," nor for the laity to say, "My dentist says I have got gout in my teeth." The time has come when emphatic protest, even to the adoption of severe criticism, should be made against such inadequate and erroneous conceptions of this serious mouth disorder.

"The American Text Book of Operative Dentistry" defines pyorrhea as "A molecular necrosis of the retentive structures of the teeth, their ligament and pericementum—an atrophy of the alveolar walls, together with a chronic hyperemia of the gum tissue which leads to limited hypertrophy. After a variable period the teeth drop out and the morbid action ceases with their loss. An examination of the roots of the teeth before and after their exfoliation usually exhibits deposits of calculi upon their surface. The disease is usually, though not always, attended with flow of pus from the alveoli."

As I shall have occasion to take issue with this definition it may be well to first state what mouth pyorrhea is not: It is not in the remotest degree a result of such systemic disorders as rheumatism or gout; neither is it a result of some indefinite faulty metabolism, nor some undefined "constitutional vice"; neither is it due to uric acid in the circulation. It is not a "constitutional disease," it can not be transmitted through infection in foods, drinks, the atmosphere or any other agency. *It is purely a local inflammation due wholly to local causes.*

"Molecular necrosis of the retentive structures of the teeth" may result from mouth pyorrhea, but its prime cause is interrupted nutrition due to inflammation of these structures. The alveolar border forms the real true support of the teeth, and necrosis of *it* does not appear until the inflammation has engaged the gum tissue and the pericementum with considerable violence at some portion of the *cervix*. Interrupted nutrition, due to the presence of irritating inflammatory products and other accumulated toxins on and about the teeth, is the one prime cause of the pathological condition called

alveolar pyorrhea. Proof of this is found in the fact that after *removal* of the exciting cause and *properly guarding against its return,* the nutritive function in the alveolar tissue is re-established, and all the retentive structures of the teeth resume their normal physiological activity. In many well attested instances, under proper treatment, new alveolar sructure has formed about the roots of teeth, markedly tightening them in their sockets; this tightening, however, is accomplished not by molecular rebuilding of *surface* alveolar tissue, but it is done through granulations closing in upon the roots in the enlarged alveolus. Accompanying this closing in of alveolar tissue there will always be found a restoration of normal nutrition in gum tissue; the peculiar pink gum color and the characteristic low grade sensibility will be restored; regular festoons and striations will also reappear.

As opposed to the statement respecting "the ligament" of teeth, it should be stated there *is* no "ligament" nor any structure analagous to a "ligament" in connection with the teeth. Such a structure is purely hypothetical. I have found in a few instances in cases of progressive pyorrhea, where there has been gradual loosening of some molar tooth, generally on the upper jaw, a thickening and hardening of the gum tissue with tendency for it to adhere to one side or one portion of the neck of the tooth. This thickening of the gums is wholly abnormal and pathologic and merely an abortive effort to retain a loosening tooth in its socket. It is infrequently seen, but is the nearest approach to a ligament of any structure in connection with the teeth.

That teeth "after a variable period" of pyorrheatic attack "drop out," and that "the morbid action ceases with their loss," is quite true.

Alveolar pyorrhea is not generally but *always* attended with formation of pus. The very meaning of the term indicates "a discharge of pus" from the alveolus or from about the affected teeth, and no true condition of pyorrhea can exist without pus discharge.

Another quotation from "American Text-Book of Operative Dentistry":

"Clinically the cases in which these phenomena are observed may be divided into two classes: First, those in which the disease process appears to begin at the gum margin; the second class, those in connection with which there is much controversy, begin at some portion of the alveolus between the unbroken and apparently healthy gum

margin and the apex of the root, the pulp of the tooth being alive."

The pulp of the tooth at the inception of the pyorrheatic inflammation is alive in probably every instance; pyorrhea seldom or never originates in the tissue about a devitalized tooth or root. There may be, and often is, pus discharge due to *necrosis of the root,* but this is a condition essentially different from alveolar pyorrhea.

I have observed in a few instances simulated pyorrhea due to decay upon the proximate surfaces of lower molars occurring below the gum margins generally below old fillings. In such cases the removal of the irritant—the decay—and filling the cavity, will cure the pyorrheatic tendency. Such instances cannot be regarded in any sense a contradiction of the statement that pyorrhea seldom or never originates in the tissue about a pulpless tooth.

That there may be no misunderstanding respecting the teachings of this paper, I will here state that as a result of close observation of the clinical expressions of alveolar pyorrhea—Riggs' disease—with an especial study of it extending over the past fifteen years, it is my firm conviction that there is no such expression of mouth pyorrhea as that designated "Class 2nd—Pyorrhea Alveolaris of Constitutional Origin," found in the "American Text-Book of Operative Dentistry," pages 401 to 420. The cut on page 408, "Hematogenic Calcic Pericementitis" (Bouchard), is a figment of the imagination; no pathological state resembling it has ever presented in clinical experience.

Listen for a moment to the confessions of the constitutional pyorrhea theorist who stands face to face with the graver aspects of this condition and a diagnosis wholly wrong:

"Inasmuch as these constitutional conditions are complex in their manifestations, and their medical and hygienic management almost exclusively in the hands of the physician, the duty of the dental practitioner is confined largely to the question of diagnosis; the local treatment, however, must be varied in accordance with the peculiarities of the local pathological condition."

It seems difficult to imagine such lamentable confessions of impotency in a dental text-book. It is true, the constitutional conditions are complex in their manifestations, because they are *results* and *not causes,* but their hygienic management is seldom or never in the hands of the physician. Alveolar pyorrhea belongs to dentistry alone, both in its diagnosis and in its treatment. When has medicine ever consulted dentistry in the matter of diagnosis?

It is not so stated and it may not have been generally observed, but it is nevertheless true that the cuts illustrating the chapter in the "American Text-Book of Operative Dentistry" from which I have quoted, were not drawn in representation of any true pathological states; many of the cuts in this work *seem* to have been manufactured to meet descriptions which had been written into the article. Pictures of teeth, alveoli, calculi, and even of instruments, are so strained and untrue that they wholly misrepresent true clinical conditions.

THE "CONSTITUTIONAL" THEORY OF PYORRHEA.

A recent magazine article, discussing this imaginative constitutional phase of pyorrhea, attacks its opponents with what might be termed a cyclonic literary rush, as though the author with a single stroke of the pen would sweep from the arena of discussion any and all who would dare oppose his theories respecting faulty metabolism causing constitutional pyorrhea. Pardon an extract :

"The disorder to which I ask your attention is that type of chronic suppurative necrotic inflammation in which the infection of the retentive structures of the tooth is deep-seated, where the suppurative inflammation is of the abscess type rather than the ulcerative, where salivary tartar is not the obvious irritative cause, and where local treatment alone is inadequate to effect a cure or prevent a recurrence of the disorder, and especially where some error in the nutritional process of the individual is a constant factor in the case."

One involuntarily pauses for breath and heaves a sigh of relief at the close of such a masterful, wordy effusion. It reminds me of the story of a very self-conscious young clergyman who was supplying the pulpit of a country church. After the service he asked the deacon what he thought of "the morning's effort." "Well," answered the old man slowly, "it seems to me a good deal like Sim Peck's first deer hunt, *when he was green*. He followed the deer's tracks all right, but he chased them all day in the wrong direction."

This author may be "on the track" of oral pyorrhea, but if so he is certainly following it in the wrong direction.

What is this "chronic, suppurative, necrotic inflammation," deep-seated in the retentive structures of the teeth? How did it originate? Such a dread condition must certainly have had a cause. What is the meaning of the *"abscess* type rather than the *ulcerative?"* Who knows or who can understand such flights of dental imagination? Salivary

tartar is *never* the obvious irritative cause of pyorrheatic mouth inflammation.

How does this, or any other writer without practical experience, know that intelligent local treatment, properly directed, will *not* effect a cure of pyorrhea, nor prevent recurrence? If local treatment will not relieve and cure, in behalf of suffering humanity, and to relieve this stigma from dentistry, I ask, what will?

What are these "errors of the nutritional process of the individual" and how are they to be corrected? Why are we not told that we may combat and avert them? The great majority of patients suffering from mouth pyorrhea are found in average physical condition. The slow pyemic poisoning may be plainly discernible to the diagnostician, but the chief *complaint* is regarding pain and loosening of the teeth—"recession of the gums." Patients are generally unaware of the disgusting odors and necrotic effluvia coming from the mouth. The constitutional *effects,* not causes, are unrecognized until absorption and ingestion of septic matter (products of the inflammation) have overpowered nutrition and destroyed assimilation.

Here is another quotation equally ambiguous from the same source:

"It is in connection with this condition, the hyper-acid diathesis of Gauterlet, Bouchard, Michaels and others, that we find pyorrhea as a concomitant local disease."

There is certainly no information to be derived from this statement.

In an article entitled "A Contribution to the Study of Metabolism," we read:

"We are greatly indebted, in my opinion, to the work and observations of Pierce, Talbot, Rhein and others, who have called our attention with much emphasis to the importance of constitutional conditions of malnutrition as predisposing factors in the causation of pyorrhea, for the more closely we investigate the matter, and the more intimately we recognize the data of nutrition in its normal and aberrant expressions, the more clearly do we see the direct bearing which nutrition exerts upon the phenomena of disease invasion."

Where is the place of this jumbled nonsense in scientific literature? What does it add to our knowledge of pyorrhea?

DR. RHEIN AND DR. TALBOT ON PYORRHEA.

So far as I know Dr. Rhein has never modified the position

stated in his article on "Studies of Pyorrhea Alveolaris," read before the First District Dental Society of New York, January 18, 1888:

"It matters not so very much," he says, "if we are correct or not as to our knowledge of the etiology. To cure the disease is the thing so far as we are concerned in our daily practice; whether the disease is purely local or only a symptom of some hidden trouble, our treatment *depends upon local remedies for its successful issue.*"

From this it is evident that Dr. Rhein places the emphasis *not* on "constitutional factors," but on causes which are of a local origin. "Our treatment," he says, "depends upon local remedies for its successful issue."

Dr. Rhein has evidently been misrepresented by the author of Faulty Metabolism and placed as an advocate of "constitutional conditions as predisposing factors in the causation of pyorrhea," when he clearly favors the belief that *local* and not constitutional agencies are the cause.

Dr. Talbot, not long since, as may be recalled, complained in the *Dental Digest,* with apparent justice, that *dentists are not readers.* He is one of the trio mentioned as emphatic defenders of the theory of a "constitutional vice in the causation of pyorrhea."

So far as I have been able to discover, Dr. Talbot's contribution to alveolar pyorrhea consists in affirming that much of the supposed pyorrhea is not pyorrhea at all. If I understand correctly he has named it "Interstitial Gingivitis"; I have failed to discern in just what way the *nosology* of this affection calls our attention "with *much emphasis* to the constitutional conditions of malnutrition as predisposing factors in the causation of pyorrhea."

The closing paragraph of "Studies in Metabolism" is as follows:

"From the viewpoint I have endeavored to set before you it *must be* obvious not only that pyorrhea, within the limitations which I have for present purposes confined that term, is the indication of a state of abnormal nutrition, but that it being a result thereof, we must seek to remove the constitutional vice before we can hope to successfully treat the local disorder."

This method of treating pyorrhea would certainly be unique. It reminds one of the suggestions of a flying-machine promoter, who, when asked how he expected to get his machine into the air, said he proposed to suddenly move the earth away from the machine and leave it flying.

To the ordinary mind it would seem a perplexing and really difficult problem to eliminate a "constitutional vice" from the human system to prepare the mouth for the local treatment of pyorrhea; more especially as pyorrhea has no constitutional causes and dentistry has little to do with constitutional disorders or constitutional remedies.

The article from which the above excerpts are taken fails to cite a single clinical case, or give a hint as to what this "constitutional vice" may be, or to suggest a remedy or a mode of treatment.

Turning to other writers upon mouth pyorrhea, we see most frantic efforts at originality in endeavors to present causes for this condition; many of the theories appear more like some incoherent mental ataxia than like rational formulations. Some are so conspicuously absurd as to deserve only ridicule.

A recent medico-dental writer in a paper before a large dental society, in all seriousness, ascribed "infected toothpicks" as a principal cause of pyorrhea.

Such teachings have not only hindered, but practically arrested all investigation, and very generally fixed the status of mouth pyorrhea in the minds of the profession, as "an incurable disease."

Another school, possibly more intelligent, affecting to find pyorrhea "a disease," ascribe it to "heredity," to the "gouty diathesis," or to some "constitutional vice." All such presentations are unintelligible, inexplainable, and account for none of the clinical manifestations of this depraved condition.

In a beguiling pamphlet recently sent out to the dental profession by a certain manufacturing concern, may be found a labored attempt to present alveolar pyorrhea as a constitutional disease due to a so-called uric acid diathesis. This pamphlet, although signed by an "M. D.," is evidently from the pen of one wholly without experience either in the diagnosis or treatment of mouth pyorrhea. The article, like several that have followed it, is well framed to mystify and mislead with respect to both the etiology and the treatment of the disorder. Names, facts and inference are speciously garbled and perverted, unmistakably in the interests of the commercial preparation which it recommend as a *constitutional* remedy.

I think it may be fairly judged that so long as dental journals, professedly "devoted to the interests of the profession," spurn experi-

ence to glorify self, while holding to the fallacy of a *constitutional* mouth pyorrhea and ascribing the unknown and unknowable as its cause; so long as teachers in our schools can be found to lend their influence to commercial concerns that are advertising constitutional remedies for pyorrhea, so long (perhaps) will dentistry as a body stand as it does today, in suspense and uncertainty before this condition of local inflammation in the human mouth.

THE ONE MANIFESTATION OF PYORRHEA.

Having considered some things that pyorrhea is not, let us now study alveolar pyorrhea or, better, mouth pyorrhea, in its one and only manifestation, viz.: as a pathological state of the human mouth, originating principally in adult life, imperiling the general health and involving the disability and final loss of the teeth.

Alveolar pyorrhea is a circumscribed inflammation in certain tissues of the mouth; an inflammation caused wholly by the presence of natural teeth and the stagnant septic matter adherent to their exposed surfaces. No agencies, factors or causes tend to originate this pyorrheatic inflammation from a general or constitutional aspect.

It is not a disease of constitutional origin; its manifestation near to or past middle life only, its universal location about the roots of natural teeth, its special association with teeth having large bell-shaped crowns dense in structure and that are practically exempt from decay; the complete immunity of all edentulous mouths or parts of mouths where there are no teeth, and, more than all, the absolute cure of the pyorrhea without regard to constitutional remedies, that always attends extraction of the teeth, all attest with unerring precision that it is a trouble having not only positive and distinct local *origin,* but local irritation for its maintenance as well.

Whilst there are constitutional disturbances connected with it, the constitutional disturbances which arise are results and never causes.

Accurate observation reveals the fact that calcareous matter (tartar), in and of itself, upon the teeth, while it may cause absorption of the supporting structures, seldom or never gives rise to a condition of true pyorrhea. The teeth more frequently found enveloped in masses of salivary calculi are the lower incisors and cuspids and the superior first molars. These teeth may be loosened even to the point of exfoliation through absorption of the alveolus due to increasing deposits of tartar, without the development of alveolar pyorrhea. The

infection arises from the breath from vitiated mouth secretions and excretions and from chemical decomposition and decay of waste substances in the high temperature of the mouth.

Toxins from these and other sources more or less constant in the mouth become cemented to the teeth chiefly through the influence of the nocturnal mucus; they form upon the teeth the so-called bacterial placques; these, undisturbed day after day, often year after year, become stagnant and offensive, and the occasion of most virulent infection.

Mouth pyorrhea is common to both sexes, but it is rarely manifest before middle life. Its development is always in connection with *uncleanly* mouths, and more commonly those in which practically full and crowded dentures are found.

Heredity has no influence whatever in the development of mouth pyorrhea. That heredity has an influence in determining the shape and general characteristics of the teeth is well known and fully conceded; but while certain shapes and characteristics of the teeth are favorable conditions, they are in no sense a cause of the trouble.

Temperament as a factor in mouth pyorrhea is very imperfectly understood. An example of wholly erroneous views respecting it is found in the position of a certain professor, who in speaking recently upon this point, declared that the "disease prevails" most generally in the *sanguine* temperament. The true condition is exactly the reverse of this. It is extremely doubtful if a mouth having the typical marks of the actual sanguine temperament, that is, teeth of yellowish hue, small, rather than large, perfect in mold, shape and structure, short and having little constriction at the cervix, regular in development, never unduly crowded, occlusion perfect, was ever the subject of pyorrhea. I have never seen one. *Per contra,* the nervous, bilious and lymphatic temperaments, with all their compounds and admixtures, present formations and conditions of teeth and jaws favoring the retention of infection about the teeth and the consequent development of pyorrhea. But while this is true, no attempt at classification or discussion of temperaments in this relation can possibly add anything of practical benefit to our knowledge of pyorrhea.

Local conditions, however, promoting the development of pyorrhea, demand most careful study. They are, first, the presence of natural teeth in the mouth (pyorrhea is impossible without natural

teeth) ; second, the shape, character, number and displacement of the teeth in the jaws; and, third, the *condition of the crown surfaces and the character and properties of the fluid environment when the mouth is in repose.* That the presence of natural teeth is necessary for the development of pyorrhea is manifest from the fact that pyorrhea never appears in an edentulous mouth, but uric acid and gout, the supposedly necessary constitutional factors, are as constant attendants of edentulous mouths as of cases where teeth are found.

The general character of the teeth, that is to say, whether they are dense in structure with only a thin layer of cementum enveloping the roots, a condition necessitating limited and difficult circulation in this tissue, or whether the teeth are soft in structure, and possessed, as is usual in such cases, of a thicker cemental layer, permitting freer circulation in the cementum and greater vital energy to oppose external irritants, present local conditions of importance; in the one case favoring the development of pyorrhea and in the other hindering it.

The anatomical formation of the teeth also, that is to say, whether they have large, irregular crowns with strongly marked necks, and crowded as they frequently are into small misshapen arches, or whether the teeth are of medium size, or small, with crowns merging into roots without marked cervical construction and regularly placed in well developed arches; these conditions constitute marked predisposing or prophylactic features in the development of pyorrhea.

The third and most important factor among the local conditions for the induction of pyorrhea, is the infection present on the exposed parts of all untreated teeth, especially the proximal surfaces. Even when considerable care is exercised by the patient, viscid, toxic matter quickly accumulates upon untreated teeth, and this infection, stagnant and fetid, retained day after day, especially in the more inaccessible places, as between bicuspids and molars and along the depressed gum margins, becomes a prolific source of the pyorrheatic inflammation. These stagnant accumulations act to obstruct circulation in gum tissue, pericementum and alveolus and induce inflammation in the surrounding tissues. This infection is specially active in the normal high temperature of the mouth and often intensified by the toxic emanations from decaying teeth and other mouth debris.

(To be continued.)

THE FIRST TREATMENT.

FRANCIS E. BURNETT, D. D. S., CHICAGO.

The declaration to be made is that the success in treating a tooth depends upon the first treatment that the tooth receives. Also that when this first treatment is thorough there are potent influences for good that accompany it, other than those from instrumentation and medicine, and that these influences produce unfavorable results when the treatments are done by piecemeal.

There are two types of treatment to which reference is made. One is a first treatment which is thorough and complete, in that all the conditions are recognized and cared for at the first appointment. The other is a piecemeal or partial type of treatment, in which the entire symptoms are rarely brought out, and something is left to be developed and treated at a second appointment. The classification of this last type of treatment would be temporary, makeshift, piecemeal or incomplete.

So great are these influences incident to the first treatment, it may be said without reservation that no other subject is of greater moment in the successful handling of the teeth. If around this first treatment depends the success of the operation, then the converse is true that associated with it are the failures, loss of time, loss of confidence and lost opportunities. The last of these seems to suggest so much that the question is put over again—the first treatment, lost opportunity? For it is lost opportunity or not as the first treatment is handled.

The plea is that the tooth to be cared for should be thoroughly treated at the first presentation. Do not piecemeal the first treatment; do all that can reasonably be accomplished at the first attempt. The patient's mind at the first presentation is fresh with the memory of every symptom that is normal to the condition as found; also he is in a receptive mood for the treatment, as will be described later. If the treatment of the tooth be by piecemeal, the symptoms will be absorbed and the conditions so changed thereby that the operator will never know the true condition of the tooth as first presented.

From the diagnosis, however complete or correct, the treatment is begun, which should be thorough. As the operation proceeds the

little symptoms normal to the condition exhibit themselves, and each step unfolds its truths and is considered and treated in the light as found. The little sidelights gleaned from the patient, all the little conditions encountered, however minor, go to make up the whole, and finally the first treatment is over, the diagnosis complete and patient dismissed.

Something more has been accomplished than the mere application of instruments and medicines. There is a psychological time for this first treatment, which is when the patient first presents himself, and his mind is in the affirmative. Could we read it, it would say, "*Now* we are accomplishing something; soon we will have this tooth under control." This psychological condition is marked by courage, confidence, hopefulness and indulgence. Because of these the first appointment is the fitting time, since the patient realizes the need then and there; it is the indulging time, because he knows he must devote himself to operation; and it is the ripe time when all these conditions combine for success and offer opportunity for the operation to be careful, thorough or prolonged.

If there is ever to be forebearance for possible after pains, it is while this affirmative mood prevails, while a spirit of approval lasts. But by piecemeal treatments, with but little tangible evidence of success attained, a negative time has arrived, and there is despair, disdain and lack of confidence, or, what is worse, patient fails to return or perhaps may wish the tooth extracted.

The first real accomplishment in a thorough first treatment is the conscious feeling the operator has of a knowledge of the conditions found, and that he has met them by his best endeavor. At the second appointment, with these convictions so strongly intrenched, the spirit of challenge prevails, also the belief that the operator is master of the situation. This is in sharp contrast to a second treatment, where the first was but a mere makeshift, with but little accomplished, and that without a knowledge of the conditions of the tooth.

With the first treatment promptly and thoroughly done, reaction may begin from that hour, when perchance at the second appointment the tooth has lost all pathological conditions, and needs only to be passed upon. This implies a saving of time of operator and patient; and who will say that the first and intervening days frittered

away by piecemeal treatments are not those of anxiety or agony to patient?

This, however, is not all, for with a prompt, thorough first treatment the operator has unconsciously raised his aim to higher ideals and his work will so continue throughout the operation. His thoroughness will not harbor a vacillation of judgment, while, on the other hand, had he begun by makeshift methods, he would lose conviction and gain despair, and the operation terminate with a promise for another day. But, alas what little solace is his comment to a night of pain after this ill-advised operation! How different, if with a consciousness that favorable results had been obtained, it had been declared that the tooth was on the road to recovery!

Granting that the tooth did not respond immediately to the care given it, and there was pain, who is better prepared to defend this work than he who did carefully and intelligently this first treatment. Surely, if pain does follow, it is only a belated symptom and is better nuderstood in the light of the first careful handling.

While it matters little what kind of conditions are being met in this first treatment, the comment thus far has been with the picture of a putrescent tooth in question. If in this first treatment the operator has not reached the point where the tooth could be properly sealed, has not the day to accomplish this been delayed? If a tooth saturated with poisons be agitated with instruments and medicines, as in a temporary treatment, how will the operator recognize the original symptoms at the apex of a tooth? What is in prospect but failure where a tooth is insecurely sealed, permitting saliva to permeate the medicine? Does the careful, thorough operator, who securely seals a medicine in the tooth, have complaint from his patient of a bad taste produced in his mouth? If the supersaturation of dentine of a tooth standing open requires time for the moisture to disappear by absorption, how much delay is occasioned if that tooth be not securely sealed at the first appointment? Will a mixture of saliva, ptomaines of decay and medicines which enter the tooth substance defeat the operation, or does the thorough first treatment promise more?

The first treatment should be thorough and careful, that it will leave a favorable conviction with operator and patient. Take advantage of the opportune time to be thorough, get the first treatment

over that the tooth may be rested. Free the tooth quickly from the contaminating conditions, such as they may be. Leave nothing undone which might cause patient to seek relief elsewhere. Let the care taken be so apparent that the patient will congratulate himself that he is in such safe hands.

There is another type of treatment which is not a practice builder. The hasty application of arsenic brings unhappy results. How frequently has it been applied once, twice or three times, when a single application, carefully placed, might have sufficed? What are the causes of arsenical poisoning but the lack of painstaking, thorough method of sealing the agent in the tooth at the first treatment? How many times has this agent been too quickly sealed in a tooth, where a more careful investigation would have revealed a putrescent pulp canal? Will not the operator accomplish better results by one careful, composed effort, with rubber dam applied, than by several careless, slipshod treatments? If the operator would scale the teeth for pyorrhea, quits the first tooth too soon, will his mental attitude exact of him any higher skill on the remaining teeth? Not any; he can only maintain the average in a finished operation that he began with.

If a band for a crown be poorly fitted to a root, will it adjust itself any better in the finished product? Should the operator dread the return of his patient, he is not satisfied with himself or his effort. Let his first treatment have been more thorough, and it will occasion a higher attainment in the work, which will make the return of the patient a pleasure and a contemplation.

As water and oil do not mix, neither will good and bad work. Like begets like, and the first treatment, painstakingly made, will call about itself a caretaking effort to the end. The word picture that "nothing succeeds like success" applies here, for in proportion as the operator finds himself a success in that first treatment, so will success follow him. If the operator will make a prognosis of every treatment undertaken, and this, of course, a favorable one, he will exact higher ideals of himself, whereby his prognostications will come true.

The writer has never known the time when there was a conscious feeling of something left undone in this first treatment that the operation did not suffer by the condition. There is a song the title of which is "Rest, Rest for the Weary." It must have been written by a dentist who believed in a *first thorough treatment*—that rest, rest for the weary, might come to that erring tooth.

I WANT TO KNOW.

Dear reader, let me plainly state
For information I've a thirst,
And simply must interrogate
Though ask indulgence from you, first;
When I remark, I feel assured
Some problems will remain, and so
"What can't be cured must be endured,"
I want to know, I want to know.

Here comes a case, a howling kid,
His gentle mamma's only pet;
'Neath tears and grime his features hid,
'Gainst all persuasion firmly set.
He won't stand up, he won't sit down,
His shrieks are heard ten blocks below.
Shall we just smile, or shall we frown?
I want to know, I want to know.

Shall we suggest to mamma dear
How difficult it is to treat
Her darling's tooth by just a mere
Inspection of his kicking feet?
Or shall we say, in accents firm,
"Dear Madam, out your child must go,
Else with 'seatitis' make him squirm?"
I want to know, I want to know.

Appointment made for ten-fifteen,
With promise strict to be "on time,"
You're ready, calm and quite serene,
But clock ticks on, with steady rhyme.
It strikes eleven, no patient yet,
You feel your "bile" commence to "flow."
You'll hide chagrin, and smiles she'll get?
I want to know, I want to know.

Posterior lower, mesial root,
With hardened pulp and broken crown;
A regular sloppy, slippy brute,
No clamp can hold your dammed dam down.
All submarine your work must be,
You do the best you can, and so
Your conscience from all qualms is free?
I want to know, I want to know.

We're offered gold that's made by "A,"
Who claims the best the world affords;
Each maker to—including—"K,"
His secret method fondly hoards.
We're anxious, quite, to help each man,
Who, in turn, gives us half a show.
Can we believe all ads we scan?
I want to know, I want to know.

There's "pulpocide," there's "pustocro,"
We're told will bring us peace and joy.
"Enamelite" and "Plugemso"
Will save the teeth of man or boy.
While German germs, with Latin names,
Will all drop dead, if you'll but show
To them a vial of "What's their names?"
I want to know, I want to know.

It's certain, sure, with perfect ease
If you'll use "Umpson's Rigmarole,"
That greatly dreaded "Rigg's disease"
Will quickly vanish, stem and bowl.
While "Palepurepink," or "Neverstink,"
If used, with gratitude you'll glow.
With pain your patients never wink.
I want to know, I want to know.

For tooth extracting all you need
Is "Curvcocrooko" forceps, made
To give you certainty and speed
No matter how the root's decayed.
With Dr. Molar's "Gum Drop Dope"
Your patient's teeth—the whole blame row—
Don't hurt a bit, slide out like soap.
I want to know, I want to know.

Use "Calcic's Special Plasteroid"
To take impressions in the chair,
It's bliss and joy, pure, unalloyed,
You're patients will insist, and where
Full anasthesia's needed, just
Buy "Wheezy Sleep" from Doctor Blow.
Can you his assertions trust?
I want to know, I want to know.

There's claims for porcelain, low and high,
Each strongest edge, each closest shade;
Each easiest worked, each slick as pie,
Each free from shrinkage, highest grade.
For inlays, shall or shall we not
All cavities cut "thus," or "so"
That when we set 'em they'll stay "sot?"
I want to know, I want to know.

In matching shades for porcelain crowns,
Why is it we can't get 'em right?
You set a crown you know is brown,
Before cemented—then its white;
Or green, or grey, or other tint
In various lights the colors show
Like sticks of candy peppermint.
I want to know, I want to know.

A moment, when you're plugging gold
You leave your patient in the chair.
With emphasis the youngster's told
To exercise the greatest care.
He must be sure to keep his hands
Below his belt. But does he? No.
He feels to learn how firm it stands.
He wants to know, he wants to know.

Why is it, when you take a bite
In preparation for a plate,
The patient makes herself a fright.
She will protrude or oscillate
Her mandible in any way,
Except the way it ought to go,
And your suggestions won't obey?
I want to know, I want to know.

So run the problems, day by day,
In fact some run into the night.
We work them out whatever way
It seems to us is good and right.
To please our patients, satisfy
Our own dear selves, and "make it go"
And do we solve 'em? Well, we try.
I want to know, I want to know.

A. S. GREENWOOD.

ABSTRACTS AND SELECTIONS.

PLEA FOR CONSISTENCY IN THE USE OF TERMS APPLIED TO LOCAL REMEDIES CLASSIFIED ACCORDING TO THEIR PHARMACOLOGICAL ACTION.*

BY E. T. LOEFFLER, B. S., D. D. S.

Consistency or uniformity in theory and practice has been urged in every branch of the Dental Profession. Uniformity in the practice of crown and bridge work; uniformity in the treatment and extirpation of the pulp; uniformity in the practice of orthodontia, and uniformity in the preparation and filling of cavities.

The question of consistency or uniformity in the use of terms is equally important. There is nothing, it seems to me, that reflects so much upon the dignity of a profession as the haphazzard use of terms. The last edition of the *United States Pharmacopeia* gives a number of changes in the names of drugs. The reason for this is quite apparent; it is to bring about a greater degree of uniformity.

By consistency I mean an agreement with itself at different times. "Consistency in use," is the phrase to which I wish to call your special attention. When a term or word has been defined in a certain way, its use or application should always be made with due respect to this definition. Definitions, of course, are more or less arbitrary, but even when a term has been made, as it were, to mean a certain thing, this meaning or definition should be kept in mind when a practical application is made.

Let us take, for example, the word pharmacology. According to Professor Cushny, pharmacology is, "A study of changes induced in living tissues by the administration, in a state of minute division, of such unorganized substances as are not merely used as foods." I very much doubt the existence of any definition in all medical science that will compare with this for comprehensiveness and is so lacking in

*Read before the First District Dental Society, March 11, 1909.

hyperbole. There are several other terms, as physiology, pathology, bacteriology, etc., that could have a similar definition.

Pharmacology might, with propriety, be considered a department of biology, and, as has been suggested, quite closely related to other sciences included under that head.

As indicated in Cushny's definition, the drug must be introduced from without, because so many active agents are formed within the body itself that a study of the changes they induce belongs more appropriately to the department of physiology; on the other hand, an investigation of the effects produced by organized bodies introduced from without should be included under the head of bacteriology.

The same consistency ought to be maintained in the use and application of other terms. Since the dentist is specially interested in topical remedies, I shall endeavor to confine my discussion to pointing out the lack of uniformity that exists in the application of terms generally used for such purposes.

As a first example of inconsistency, let me call your attention to the three terms, caustic, escharotic and corrosive. Dorland, in his new Medical Dictionary, defines them in the following manner: "Caustic. (1) Burning or corrosive; destructive to living tissue; (2) Having a burning taste. (3) An escharotic or corrosive agent. Escharotic. (1) Corrosive; capable of producing an eschar. (2) A corrosive or caustic agent. Corrosive. Destructive to the texture or substance of the tissue."

Here we can readily notice the great similarity of meaning—how one word is defined in terms of the other. They are to all intents and purposes synonymous. Webster says, "If no words are synonymous except those which are identical in use and meaning, so that one can, in all cases be substituted for the other, we have scarcely ten such words in our language. Words may thus coincide in certain connections, and so be interchanged, when they cannot be interchanged in other connections."

The drugs and agents usually classified under the above heads differ so materially in their nature and action that it would seem wise to give each word used to designate them a different meaning.

To explain in detail this difference in action I cannot do better than quote from Steven's latest edition of Materia Medica and Therapeutics. He says, "Escharotics are agents that corrode or dis-

organize the tissues. Some, like arsenic, have a specific poisonous action upon the cells; some, like the strong mineral acids, extract water from the tissue and precipitate the proteids; some, like the alkali hydrates, not only extract water but dissolve the proteids and form with them soluble compounds; some, like nitrate of silver, form with the proteids insoluble albuminates and in so doing, liberate an acid; some, like nitrate of mercury, poison the cells directly, form albuminates with their proteids and also set free an acid; while others still, like bromin, are powerful oxidizers of organic matter."

By the profession in general and in most text-books, the terms, caustic, escharotic and corrosive are used interchangeably to express these different actions as stated above. It does seem very reasonable and fair, that by slightly changing the meaning of each of the above terms, we could, at least, form three distinct groups of the agents usually classified under this head.

After considerable thought and study I have concluded to adopt the following definitions, which I trust will receive your careful consideration.

A caustic is a drug or agent that coagulates albumen, is more or less limited in its action and forms a soluble eschar, as phenol and trichloracetic acid.

An escharotic is any drug or agent that coagulates albumen, is limited in its action, and forms a more or less insoluble eschar, as nitrate of silver and the actual cautery.

A corrosive is any drug or agent that may or may not coagulate albumen and is more or less unlimited in its action, as the alkaline hydrates and the stronger mineral acids.

These definitions give each term a distinct meaning and refers to a particular class of agents. Expressions, therefore, like "lunar caustic," and "caustic soda," should be considered misnomers. Both the drugs referred to differ quite materially in their action, and the term caustic, according to the above definitions, should not be used in either case.

Again, each of these three classes of agents, as suggested, has a distinct practical application. Caustics, for example, as phenol and trichloracetic acid, are used very largely for removing hypertrophied gum tissue, as in the preparation of proximal cavities and the setting of Logan crowns. In such cases deep penetration or an insoluble

eschar is not desired. If, on the other hand, we wish to produce an insoluble eschar, as in the treatment of cancer sore or check hemorrhage, we use an escharotic like nitrate of silver of the actual cautery. These agents form a more or less insoluble eschar and will remain intact for some time.

In case we wish to remove a small tumor like a wart, a corrosive, like nitric acid is indicated, because both caustics and escharotics are too limited in their action to produce the desired effect.

Long, in his text-book on Materia Medica, Therapeutics and Prescription Writing, classifies all these agents under the head of escharotics, although, in the introductory remarks of the chapter, he clearly intimates that a division should be made.

Right in this connection I would like to state that it has always been a difficult matter to classify arsenous trioxide. Long says, "It stands alone in its characteristics as anaescharotic. It cannot be called an irritant. It is not a corrosive. It has no decided chemical affinities; therefore it is not escharotic by means of any apparent chemical action. It stands by itself as a vital or alternative escharotic, in that it acts only after being absorbed by the tissue elements, altering or destroying their vital processes in an obscure manner."

Now, while this may be true in regard to arsenous trioxide, most of the other drugs coming under this head can be very readily designated as belonging to a distinct class, as outlined above. The three terms, caustic, escharotic and corrosive are in use, why not apply them with a distinct meaning?

My experience in teaching the subject of Dental Therapeutics has been that students are continually failing to grasp the true meaning of definitions. They are after facts rather than principles, and text-books as well as instructors are at fault in not pointing out the difference and importance of clearer definition of common terms.

I am thoroughly convinced that a consistent application of technical terms is, perhaps, one of the most interesting and important features in all medical and dental science. This statement is true, to some extent at least, in every science; but with the progress of modern aseptic surgery, the amount of discrepancy in regard to the signification and use of certain terms is perfectly amazing as compared with the general intelligence on this important subject.

I have made a careful and conscientious study of this subject,

and I very much doubt whether a better and clearer verification of the above fact can be given than is illustrated by the usual application of the terms, antiseptic, disinfectant, germicide and sterilize.

Professor Novy, of the University of Michigan, defines the terms referred to as follows:

"An antiseptic is any drug, chemical substance or agent that will retard or inhibit the growth or development of micro-organisms."

"A germicide is any drug, chemical substance or agent that will, in a limited time, destroy all forms of vegetative bacteria."

"A disinfectant is any drug, chemical substance or agent that will, in a limited time, destroy all active forms of pathogenic bacteria and their noxious products."

"To sterilize means to destroy all active forms of bacteria as well as spores."

It may seem like an imposition upon your good nature, but I cannot help giving you an unusual amount of repetition to make plain the distinction between such terms as antiseptic and germicide. In Professor Novy's laboratory book on bacteriology, we have the following statement: "The first action of a chemical substance, when added to a recently inoculated culture medium, is to inhibit the growth of the organism. If the chemical substance is highly poisonous, and is present in sufficient amount, it will evidently kill the bacteria present. On the other hand, many weak substances, commonly designated as preservatives, will prevent the development of bacteria, but are not able to destroy them.

Here we certainly have a clear distinction between the words antiseptic and germicide, the one destroys while the other only retards or inhibits. When sufficiently diluted, a germicide will, in most instances act as an antiseptic.

In his text-book on the principles of bacteriology, Professor Abbott points out very clearly the difference between the words sterilization and disinfection.

He says, "In most laboratories it is customary to employ the term sterilization for the destruction of bacteria by heat, and the term disinfection for accomplishing the same end by chemical agents. We shall endeavor to show that this distinction in the use of the terms is not strictly correct.

Those of you, who are familiar with such methods will remember

that the use of the term sterilization for destroying bacteria quite likely arose from the fact that all culture media and other articles to be rendered free from bacterial life are not treated by chemical agents as a rule, but are exposed to heat in an apparatus known as a sterilizer. This process is called sterilization. On the other hand, however, undesirable articles, useless cultures and all infected material may be subjected to the action of chemical agents, called disinfectants, and the process is called disinfection.

By careful study and investigation I am thoroughly convinced that the term sterilization really means a complete destruction of all bacterial life, and may be accomplished either by thermal or chemical agents. Disinfection does not necessarily mean destruction of all living forms, but only those that are infectious. Both, however, may be accomplished by the same means.

An indefinite number of illustrations might be given to show that, for example, an antiseptic agent simply retards or prevents, a germicide destroys all active forms, while a disinfectant is used principally to destroy pathogenic forms and their noxious products, and lastly, that sterilization means the destruction of all life.

Dr. Miller, in his work on "Micro-organisms of the Human Mouth," makes the statement that, "A solution which devitalizes spores in one minute is out of the question, and in fact, is not at all necessary, since the conditions which lead to the formation of spores do not exist in the mouth where we find almost exclusively the vegetative forms." Yet, in several instances, he uses this very term when the word "germicide" or "disinfectant" would have been more appropriate.

Some drugs, like phenol and the essential oils, may be used either as simple antiseptics or germicides by simply varying the strength of the solution. Others, however, like permanganate of potash and hydrogen peroxide, are excellent disinfectants and germicides, but are absolutely useless as simply antiseptic on account of their transitory character.

The real difference between the above agents is often best explained by giving their essential qualities. I shall give only one illustration, and that is in the case of a simple antiseptic: A desirable antiseptic should have the following qualifications: (1) It must have staying or lasting qualities or be only slightly soluble, otherwise it will be

too rapidly absorbed and its action lost; (2) It must be non-irritating, because it would remain in contact with the tissues a long time; (3) only slightly toxic, on account of the danger of absorption; (4) it should not discolor the teeth; and, (5), it should have a pleasant taste and odor.

"Local anesthetic" is another expression that should not be used, inasmuch as we have another term that expresses that condition. Anaesthetics are usually defined as agents that abolish all insensibility. Analgesics, on the other hand, act locally and are used either to prevent or relieve pain. Anodynes are drugs or agents that are used to relieve pain, and not to prevent it. Obtundants are drugs or agents employed to desensitize sensitive dentine.

These terms have been coined for a special purpose, as it were, and yet how often do we hear or see in print such expressions as "local anaesthetic" instead of "local analgesic" or simply "analgesic;" and the word, "anodyne" for "analgesic" or "anaesthetic." Each of the above terms has a distinct use for which it was coined and intended.

We often fail to make ourselves understood or to make things plain, not from a desire to withhold information, but rather from an unintentional failure to use the proper words.

In conclusion, I would like to add that this subject has been to me a very interesting field for investigation for the past four or five years.

I sincerely trust that the task I have undertaken to point out, the imperative necessity of putting into practice the subject of my plea and of finding a way of doing it, may receive your hearty co-operation.

The probable result and the benefit that may be derived therefrom warrants, I think, not only the slight effort to endorse, but to put it into actual practice as well.

THE COAL TAR PRODUCTS AGAIN.

In a recent pamphlet, entitled "Antipyrine, Acetanilid and Phenacetin, Are They Harmful or Habit Forming?" the author, Dr. Uriel S. Boone, an established physician of good standing in St. Louis, has furnished a valuable contribution to the long-drawn-out discussion of this important subject.

There are several points about this investigation of Dr. Boone's which distinguish it from almost every preceding canvass of the

subject, all of which might be summed up in the statement that it bears every appearance of being a genuine search for the unvarnished truth, that it is conducted in a proper spirit of fair and open investigation, directed in the most reliable quarters, and that its results are presented in a fashion which makes his report peculiarly satisfying and convincing.

Dr. Boone has, as we think, rightly opined that "the hospitals and sanitariums of the United States would contain unbiased, unprejudiced evidence, unaffected by any thought of the result upon the drugs themselves"; and he has "selected them as the field of his investigation because they keep records of their cases which few physicians in private practice do, and because, if these drugs were habit-forming, many of their habitues would, naturally, go to hospitals and sanitaria for treatment, and these institutions would have complete records of their cases."

He has, therefore, addressed his inquiries—which, by the way, are not in the slightest degree leading—(indeed, they do not even indicate any preconceived opinion on his part)—to the sources which, above all others, the average man would think were best able to furnish trustworthy data on the subject, which the officials of the Agricultural Department, in the conduct of a recent similar investigation, refused even to consider, it being thought, by them, for some inscrutable reason, to use their own words, "that information from these sources would not be of a strictly representative character." And Dr. Boone brings his witnesses into court and makes them testify in their own verbatim language and over their own corporate and individual names.

A summarization of the statistics and data contained in Dr. Boone's pamphlet shows that he received and publishes reports from 1,027 hospitals and sanitaria. Of these, 996 report that in all of their experience with the coal tar products there have been no instances of any untoward results, and that not a single case of habit formation from them has come under their observation. Injurious effects are reported by six hospitals only, all of which were due to overdose or other improper use of the remedies; seven institutions report cases, but state that they have no records, and therefore give no details; and one reports a case of insanity. The remaining seventeen out of the residuary thirty-one report cases of irregular pulse, weak heart action, cyanosis, etc., under the administration of the drugs, none of which,

however, were regarded as of enough importance to be noted in the report as serious, all of which were due to misuse of the drug, and all recovered. Not a single case of fatality is reported in the entire period covered by any one of the hospitals or sanitaria.

The scientific value of such an investigation and the trustworthiness of its evidence have only to be suggested in order to be immediately appreciated by any fair and unbiased mind. Here is an array of witnesses with no concealment of names or places, with no possible interest to subserve one way or the other, and hence with no thought of making a case for or against the products, each giving testimony from records that have been made with the careful accuracy which prevails in such institutions, all of which can be readily verified by any physician who cares to inspect those records, all set forth plainly and categorically, with no special pleading and with no conclusions or deductions, except those which the testimony itself forces upon the reader.

One can not fail to be impressed with the contrast offered by this investigation of Dr. Boone's to the methods employed and the showing made by the Bureau of Chemistry, under the direction of Dr. Wiley, in its recent investigation of the same subject (referred to above), the results of which were published in its Bulletin No. 126, and whose specious and misleading conclusions Dr. Boone's inquiries were evidently designed to offset. A series of leading questions framed, as were those of Dr. Wiley, to elicit precisely the answers desired, and addressed to only 925 physicians, whose names are carefully withheld from the report and who, for all we know, may have been specially selected and prejudiced men, can hardly be regarded as the likeliest methods of obtaining impartial and trustworthy information upon this or any other subject.

The entire mass of evidence that filled this bureaucratic report was puerile, illogical and inconsistent; its testimony was incompetent; its facts were distorted, and its pleadings were so specious and prejudiced that they left no doubt in the mind of impartial readers of the predetermined purpose of the inquiry to condemn the products under the pretended investigation.

So strong was this prejudice, especially against acetanilid, that the most simply explicable data were twisted and distorted to serve its purpose, as for example, the explaining of the more extensive use of phenacetin, on the ground that it was the least harmful of the coal

tar agents, when everyone with a grain of intelligence understands that, whatever excellence phenacetin may possess over acetanilid, its predominance in medical practice must be largely due to the fact that up to a very short time ago it was a proprietary, and hence was extensively and persistently advertised. In another place the bureau pointed out that the largest proportion of disasters occurred during the first eighteen months after the introduction of acetanilid, that in the next thirteen years the number of such disasters fell off, and that since 1904 there had been a notable increase in fatalities; and this it explains by the consideration that at first the dangers of the drug were not fully appreciated; that later, as it became better understood, it was used more carefully, and that of late years its use by the laity had given rise to increased fatalities. The true explanation, of course, is to be found in the fact that when acetanilid was a new remedy it was widely discussed and precisely reported on; and that as soon as the novelty wore off and its nature and action became thoroughly known, it naturally ceased to be the subject of frequent and detailed report and possibly was not used to quite the same extent as formerly.

And so the matter would have rested but for its agitation by the *Journal of the American Medical Association* and its lay allies—*Collier's Weekly* and the *Ladies' Home Journal*—during which the country was scoured for evidence, genuine or spurious, to bolster up their indictment against American medical specialties, and which represent precisely the five years or so in which the bureau pretended to find an increase in the number of fatalities.

All of which is so transparent, and its instigation by the special interests of the medical ring so plain, that the only danger of the report lay in the color of authority given to it by the prestige of the United States Bureau. And all of which also is in marked contrast with the fair methods, the unbiased data and the straightforward presentation which characterizes Dr. Boone's report.

The result of this orderly and competent investigation of Dr. Boone's is, we have seen, precisely the reverse of the anomalous and incompetent inquiry conducted by the Department of Agriculture. Its net showing is, as any sane man would expect it to be, that the disasters and fatalities from acetanilid and the other preparations named above have been no more and no less than those from other equally potent drugs; that, as a matter of fact, their untoward effects, as in the case of other powerful drugs, have been comparatively few;

and that the beneficent effects of the coal tar products, including acetanilid, have been far in excess of their harmfulness.

It is immaterial to our criticism whether the subject under inquiry be acetanilid or any other product. What the medical and pharmaceutical professions are interested in is that investigations of drugs, by whomsoever undertaken, shall be fair and honest, which that of the Department of Agriculture can not be said to be, and which that of Dr. Boone's most assuredly is.

But without regard to the fairness and honesty of Dr. Wiley's investigation, we are unable to find any warrant in law for his proceedings in this matter. We do not understand by what or whose authority he has presumed to take it upon himself to advise the medical profession and the public in general as to what drugs they should or should not use. Nor are we aware of any statute which, however liberally construed, can be fairly said to give to the Agricultural Department the right to print and distribute at the public expense thousands and thousands of pamphlets in a propoganda against the coal tar products, *or for or against any other kind or class of drugs.*

But admitting the authority, we can conceive of no good reason why acetanilid, antipyrine and phanacetin should be singled out for special investigation and condemnation, as against many other drugs which are capable, if wrongly used, of producing at least equally harmful results. And in the absence of any such reason, and in view of the fact that Dr. Wiley is an enthusiastic member of the American Medical Association, is on one of its most important committees, and is outspokenly sympathetic in the fight which that association has waged against American medical specialties, we can not help feeling that he has allowed himself, innocently or otherwise, to be used as a tool to further the destructive schemes of the crafty medical clique at Chicago.

We believe that the investigation and report of Dr. Boone represents the real status of acetanilid and the other coal tar preparations. Indeed, we were satisfied that this was their status before any investigation was made at all; but we are sure that the manner and substance of the testimony presented by Dr. Boone is of such a character as to convince the fair and unprejudiced mind of the trustworthiness of its burden. Such an impartial and definite expression from the hospitals and sanitaria of the country ought to settle once and for all the vexed question of the danger and harmfulness of the coal tar products. —*National Druggist.*

NATIONAL DENTAL ASSOCIATION.

The National Dental Association, The National Association Dental Examiners, National Association Dental Faculties, The American Society of Orthodontists, Delta Sigma Delta Fraternity, and the Psi Omega Fraternity all meet at Denver during July.

The hotels of Denver are numerous and adequate. Accommodations may be had for $1.00 per day and up for room without bath, and $2.00 per day and up for room with bath. A fair average rate will be about $2.00 and $3.00 per day, for one and two persons, respectively, in room without bath, and $2.50 to $4.00 with bath. Rooms and board may also be had in private families.

The Brown Palace Hotel will be headquarters for the National Dental Association. Reservations for accommodations should be made in advance through the Publicity Committee.

The entire business of the National Dental Association will be conducted under one roof—the Auditorium—one of the largest convention halls in America. This building, owned and managed by the city, is absolutely fireproof, and is so designed that part of it can be used as a theatre, seating about 4,000 people, leaving ample committee rooms and abundant space for clinics and exhibits. All of these features can be operated without interference with each other. The following firms will exhibit:

The S. S. White Dental Mfg. Co.,	Ritter Dental Mfg. Co.,
The Harvard Co.,	W. A. Ivory,
A. C. Clark Co.,	W. V.-B. Ames,
The Dentists' Supply Co.,	The Apothecaries Co.,
Eli Lilly & Co.,	James J. Ottinger,
Pelton & Crane,	Lambert Pharmacal Co.,
Horlick's Malted Milk Co.,	Kolynos Company,
The Denver Chemical Co.,	Mulford & Co.,
Dental Protective Supply Co.,	Lee Smith & Son,
The Chas. H. Phillips Chemical Co.,	Ransom & Randolph,
Columbus Dental Mfg. Co.,	American Cabinet Co.,
Pinches Dental Mfg. Co.,	L. D. Mosher,
De Vilbiss Mfg. Co.,	Electro Dental Mfg. Co.

All indications are that the meeting will be a large and interesting one, with a good attendance from all parts of the country.

As this will be the first meeting of the National west of the Mississippi River, many will want to attend for the sake of the meeting and the opportunity to see some of the many attractions for which the State of Colorado and the City of Denver are noted.

Colorado is called the "Switzerland of America." President Roosevelt said it is the "Playground of America," and Denver, the gateway to this wonderful scenery, is justly known as the "Queen City of the Plains." Situated fourteen miles from the foothills, it commands a view of over 250 miles of mountains, while the breezes from these snow-capped peaks, together with its altitude of one mile above sea level, provide a climate at once restful and exhilarating.

All who come to Denver, if they would see the real beauties of

Colorado's mountains, should avail themselves of some of the innumerable opportunities for outings.

There are trips occupying a few hours, a day, or more time; in fact. trips to suit the purse or time of all, each with its special charm, worth seeing and to be remembered always. To enumerate in this article is out of the question, but a few examples may be mentioned: The far-famed Georgetown Loop and Mt. McClellan trip, which reaches an altitude of 14,007 feet, is the highest point reached on any regular railroad in the world.

Boulder, where the Colorado Chautauqua is located, is thirty miles from Denver—one hour's ride. Or, continuing the trip, one may take the "Switzerland Trail" route, another of the one-day excursions out of Denver.

Morrison and the Garden of the Titans, which rivals the world renowned Garden of the Gods at Colorado Springs, is an hour's ride from Denver.

In Platte Canon, a favorite resort for fishermen, from one to three hours' ride, the railroad follows the Canon of the South Platte River for about fifty miles, where there are many hotels, cottages and camping places

The Moffat Road, in course of construction from Denver to Salt Lake City, is now completed through to Steamboat Springs in the northwest corner of the state. Three hours' ride from Denver it crosses the continental divide at an altitude of 11,000 feet. It has opened up an empire hitherto almost untouched by the hand of civilization. A country rich in delights to the lover of nature, the hunter and the fisherman.

Estes Park has become so famous that it promises to be a rival of the other wonder places of the country, such as the Yellowstone National Park and the Yosemite Valley, and is reached in three hours by train and automobile. A movement is now under way to convert this into a National park.

Colorado Springs with her beautiful homes and excellent hotels, and Manitou, at the base of Pike's Peak, from where one may ascend the mountain by cog-wheel train or visit the Garden of the Gods and other picturesque places. Cripple Creek and Victor, the gold mining camps, can be reached in two hours from Colorado Springs over railroads traversing most beautiful mountains. For longer trips, if one has the

time, there is the Midland road through Ute Pass, Hellgate and down the Frying Pan River, famous as a trout stream; or take the Denver & Rio Grande through the Royal Gorge over the Tennessee Pass and through the Eagle River Canon to Glenwood Springs, from which point both roads follow down the Grand Canon to Grand Junction, which is the heart of the famous peach and apple district.

"The Trip Around the Circle." Nowhere in the world are there a thousand miles of railroad travel with so much of the beautiful and so many features of interest, scenic and historical, than are to be seen on the "Around Circle Trip." This passes through Alamosa in the center of the San Luis Valley, through Durango, Silverton, Ouray and Telluride. Through two Indian reservations and the Mesa Verde National Park, set apart by the government to protect the prehistoric "Ruins of the Cliff Dwellers."

Side trips from this tour can be taken to the Wheeler National Park near Wagon Wheel Gap, on the Rio Grande Del Norte; to Pagosa Springs, and to the wonderful natural bridges of southeastern Utah. The Royal Gorge is seen on this trip and either the Black Canon of the Gunnison and Marshall Pass, or the Grand River Valley and Glenwood Springs.

It would be out of place to pass without mention of the Hot Mineral Springs of Colorado. When America shall have made its mark in the pages of classic history, the people of the globe will be making both winter and summer tours across the oceans to the famous watering places of Colorado at Glenwood Springs, Pagosa Springs, Sulphus Spring and Steamboat Springs. Few people realize the size, variety and medicinal value of these springs, the ease of access to them, the delightful summer and winter climatic conditions, and the accommodations to be had.

It is hoped that all dentists who come will bring their wives and families with them, as the ladies and children will derive quite as much pleasure and benefit from a vacation in Colorado.

The committee has arranged to devote the day following the adjournment of the "National" to an entertainment which will be in keeping with the season and environment.

The railroads running into Denver are: The Union Pacific, Burlington, Rock Island, Santa Fe, Missouri Pacific, Denver & Rio Grande, Colorado & Southern, the Colorado Midland, and the Moffat road. Summer excursion rates will prevail from all parts of the country, and a more complete announcement will be made next month. From the East round trip rates to Colorado common points are: Chicago, $30.00; St. Louis, $25.00; Omaha and Kansas City, $17.50.

NOTICE.—It is not generally known that tickets can be purchased through from the East to Colorado Springs and Pueblo at the same rate as to Denver. By doing this the tourist can visit the numerous points of interest south of Denver (Colorado Springs, Manitou, the Garden of the Gods, Pike's Peak region, Pueblo, etc.) without any additional expense for transportation. These tickets allow unlimited stop-overs,

within final limit, in both directions, at Denver and Colorado Springs, giving all the time desired to attend the convention, take in the side-trips, etc. Tickets may be validated for return passage at either of the points mentioned, leaving it optional with the purchaser whether the ticket is used south of Denver.

Rates from Texas and the South will be one and one-third fare for round trip.

"Point Sublime," on the Cripple Creek Short Line.

Rates from the Pacific Coast and return, $55.00, and from Salt Lake City and return, $22.00.

Local offices for the assistance and direction of guests will be established at the Union Station, the Brown Palace Hotel, and the Auditorium.

Immediately upon arrival, visitors are requested to register and give forwarding instructions for mail. In case any change of address is made while in the city, they are requested to notify the Committee at once.

Mail addressed "Care National Dental Ass'n, Denver, Colo.," will insure prompt delivery.

To avoid confusion, all matters pertaining to hotels, railroads, mail and addresses of visitors, and in formation in general, will be handled through the Publicity Committee.

For detailed information, vacation suggestions, estimates, etc., write to

DR. H. F. HOFFMAN,
Chairman Publicity Committee, N. D. A.,
612 California Building,
Denver, Colo.

THE RELATION OF DENTISTRY TO PREGNANCY.*

BY JEAN CLINE, D. D. S.

In choosing this subject for a paper, I realize that I am attempting to explore what at the present time is a practically unknown field. It was about a year ago that it occurred to me that, so far as I was able to remember, no paper treating upon the subject had ever been presented before this association, and further, that the subject had not only been overlooked in the form of papers, but likewise in the discussions of the papers on other subjects.

In the preparation of this paper the writer expected to find a volume of interesting data in the literature of the subject, but to his utter disappointment he unearthed but few references thereto, and these were either of little value or were of such common knowledge that to incorporate them in this paper would be but repeating an oft-told tale. This condition of affairs stimulated my desire to ascertain a few additional facts bearing on the question under consideration, and it is with this end in view that I have attempted to write this paper, and in the future it is my hope to present to you other papers along the same line.

As I have stated, the field is a virgin one, and now that I have become interested in it, it is a matter of the greatest surprise to me that so important a subject has laid hidden so long in the shadows of obscurity.

The serious importance of the subject no one would gainsay. Stop a moment and think of the untold agonies of tens of thousands of prospective mothers (unnecessary for the most part) all because the dental phase of the condition has been given so little thought, not alone by the dentist, but by the physician as well. How many times during your practice do you recall of a physician directing a pregnant woman to come to you for dental service? Very seldom, if ever, I warrant. The attending physician generally ignores the dental condition because in the first place he has only a limited knowledge of its importance to the patient, and secondly, he has been taught to direct his attention to the other phases of pregnancy, which to him are of more importance.

*Read at the meeting of the Oregon State Dental Association, 1909.

The blame is not his alone, for we as dentists have failed to impress on his mind the value of dental service before, during and following the state of pregnancy. The public seldom, unless impelled by pain, ever thinks of their dentist at this time, and the reason for this is patent. For untold generations they have been taught that a pregnant woman must prepare herself to undergo not only the pain incidental to childbirth, but the thousands and one unnecessary agonies that their ancestors submitted to. The old proverb, "A tooth for a child," unfortunately has as much weight in the mind of the laity of today as it had in the centuries that have passed. So I say again that ours is the blame as much as the physicians.

As a dentist, I believe that countless women could be spared no small amount of pain during the 270 days beginning with conception and ending with the birth of the child, and not only do I believe this to be true, but I will go farther and state that I am firmly convinced that the nervous reflexes directly due to abnormal conditions are the causes of more premature births than the doctor or dentist have any knowledge of.

In my own limited practice it has been my misfortune to have been, unwittingly, the cause of four premature births, and mostly by reason of the fact that the patients had failed to acquaint me with their condition before submitting to the dental operations that they requested me to perform.

In one of the cases the simple operation of placing a porcelain crown on a previously devitalized incisor root was the cause of a premature birth. The patient, as I afterward learned, was in the third month of pregnancy. In two of the other cases I have mentioned the premature birth was directly due to extraction of teeth, and the fourth and last one of which I have definite knowledge was due to the nervous reflexes set in motion by a long series of dental operations, the prospective mother at that time being near the end of the third month of pregnancy.

However, it is not of these conditions that this paper is intended to treat, but of a few of the many dental ailments due either directly or indirectly to the state of pregnancy. And before proceeding further let me state (lest I be termed a plagiarist) that a majority of the succeeding facts are taken from a paper by Dr. J. E. Power,

appearing in one of the journal issues of the American Medical Association.

The process of child birth is a natural and physiological process, but natural as it may be, it is also true that conditions are daily produced which may change the natural conditions into unnatural ones; from a condition of health to one of disease, resulting in a majority of cases to nothing more than a great inconvenience to the patient; yet not infrequently it happens that the unnatural conditions thus brought about even go so far as to result in the cessation of all functions, followed by the death of the embryo or the mother or both.

Nature does much to fortify the future mother against these dangers, and in the main is successful. The heart, for example, becomes hypertrophied, so much so in fact that it expands to nearly one-fifth more than the normal weight. The left ventricle, or propelling portion, taking on the majority of the added weight. Thus giving the heart the increased power necessary to supply the blood needed to support two where but one had previously asked its services.

This added efficiency is extended to all other vital organs as well as the heart. The liver, kidneys, spleen, lungs being greatly more efficient during the latter months of pregnancy than under normal conditions. (The word normal as here used refers simply to the different conditions of the body rather than to any conditions of disease, as might be inferred.)

The nevrous system is especially affected, and normally, the changes taking place are supposed to be for the greater ability thus secured to stimulate the various organs, yet these changes taking place as they do, within such a relatively brief period of time, the least deviation from the normal or natural order of things may result in a highly abnormal condition.

For the embryo to live and reach an embryonic maturity, the pregnant mother must of necessity either digest a greater amount of food than normally, or, if the appetite does not increase (and it naturally does, she must assimilate a greater proportion of the food taken into the body and it is in relation to this condition that the dentist enters the field of action.

The alimentary canal must be kept in the best possible condition, for without nourishment there can be no life, or when an in-

sufficient amount of nourishment is supplied the growing embryo is greatly handicapped in its struggle for existence. The various changes just mentioned in the vital organs are certain to disturb the physiological equilibrium of the individual to a more or less degree. The disturbances in the nervous system have a tendency to make the patient fretful and peevish, excitable or depressed. As the term of pregnancy advances various idiosyncracies are often noted. The one most often present is generally an inexplicable craving for certain kinds of food. The patient, should she be depressed or despondent, nearly always exhibits in a marked degree a total disregard of all the hygienic laws that she previously observed with care, and it is this mental condition, combined with a lessened degree of vital resistance, that plays havoc with the dental organs.

During pregnancy the conditions that are the cause, to great extent, of all the dental disintegration, are most actively present. Holding the chemico-vital theory to be the correct explanation of tooth decay and that the mediums necessary to support the micro-organisms of dental or any other decay are heat, oxygen and the presence of moisture, it is easy to see how well these media are supplied, and in such a marked degree at this time.

These three elements are actively present in the mouth at this time more than at any other, and are supplied, the heat by the blood, the moisture by the saliva, and the oxygen by the air. So when the unclean, unresisting teeth of a woman made careless and slovenly by the nervous perversions of pregnancy are attacked by the micro-organisms of dental decay and bathed in a hyperacid saliva, it is easily seen that the dental caries is more likely to appear at this time than at any other. There is another condition favorable to decay that is of supreme moment: namely, the morning sickness, or vomiting of pregnancy. It has been claimed that the destructive disintegration of the dental structures can conclusively be traced to the periodic vomiting associated with this period of life. While in the main I believe this to be true, still I think there are other more important factors in the causation of tooth decay at this period. The vomiting of pregnancy occurring generally during the first three months, but not infrequently lasting throughout the full term, is supposed to be due to one of the three causes: namely, visceral displacement due to embryonic development; changes in the genital or digestive tract; or by a direct effect on the nervous system, superin-

duced by the displacement of the uterus, thereby causing irritation of the nerves governing the action of the digestive tract. This latter hypothesis is, in the writer's judgment, the most plausible. The conditions found in the mouth will be the same whether the vomiting is caused by auto-toxic or uropathic influences. In order that the stomach may perform its natural functions, it is supplied with gastric juices that are normally of highly acid reaction, and any pathological condition, such as dyspepsia, ulcers, gastritis or intestinal stricture which might appear during pregnancy, has a tendency to increase the acidity of the secretions and the stomach's contents. So it will be seen that during the spasms of the vomiting of pregnancy and following them, the teeth will be coated, unless the greatest cleanliness is observed, with a mixture of partially digested food, saturated with a strong solution of hydrochloric acid. It would be superfluous to follow any further the resulting effects of such a condition on the dental organs.

The special reason for such troubles appearing at this time, the most trying of a woman's existence, is difficult to explain, yet they do occur. As dentists our interests in these cases are in the direction of combatting the probable results upon the dental organs. We should be in this respect educators as well as operators, and in view of the general apathy as well as ignorance prevailing among prospective mothers, I believe it to be our duty to point out to them the danger of neglecting their teeth at such a critical period.

Nature, it is true, generally prevents many of the more dangerous conditions previously mentioned, but some or all of the lesser troubles are invariably present, and it is to assist the natural tendency to surmount these difficulties that the help of the profession is needed. It is, I realize, a most delicate question to propodund to a newly-married woman as to whether she is pregnant, and just the proper method of acquiring this knowledge is difficult to find, because every woman has her own individuality, and therefore the knowledge must be obtained from each in a manner calculated to embarrass her as slightly as possible. This knowledge, however, should be gained, and with a reasonable amount of tact on the part of the questioner can be gained with but little trouble. One should even go farther than that. It is my belief that to wait until the pregnant state occurs is to wait too long; the condition should be anicipated, and warning advice given to the patient.

In regard to establishing any special line of treatment during this time, I will simply sate that authorities differ in regard to the best methods to pursue. There is but one upon which they all agree, namely, that of obtaining as nearly as possible a hygienic condition of the oral cavity. The character of the dental services that should be rendered to pregnant women is a much debated subject. In the case of a patient who is not inclined to be nervous, one can work with almost as litle fear of harm as in the case of a non-pregnant woman. But in the more nervous, or highly excitable women, great care should be exercised. Short sittings and temporary work should be the rule. No appointments should be made at the time corresponding to the regular menstrual period, for then it appears the greatest internal changes occur, and the patient is more liable to be in a delicate condition than at any other time.

Half of the operator's success depends on whether or not he gains the patient's confidence. Impress her with the fact that you are thoroughly familiar with all things pertaining to her condition, and that under no circumstances will harm befall her.

As I have previously stated, the prime object of this paper was to bring the subject to your notice, but if in addition, it has served to arouse a sense of the responsibility of the dentist in cases such as the ones under consideration, I shall consider my humble efforts as eminently successful.—*The Dentists' Record.*

SKULLS OF A TOOTHLESS RACE.

Excavations at San Juan Teotihuacan, in the Valley of Mexico, have revealed ruins of another buried civilization, beneath the Toltec ruins. Professor William Niven, a well known archaeologist, who has been visiting the ruins, reports that the objects now being brought to light were covered with a thick layer of volcanic ashes.

Skulls of human being that show no trace of teeth have been uncovered, and this leads to the belief that the strange people were vegetarians. A number of dolls with jointed limbs were also uncovered. Many other curious objects and implements have been found and placed in the National Museum.

Four different civilizations have occupied the Valley of Mexico, the first being these unknown people, the second being the Toltec people, the third being the Aztecs, and the fourth the present inhabitants, according to archaeologists there.

THE RELIEF OF PAIN DURING DENTAL OPERATIONS.

BY GEORGE T. GREGG, D. D. S., PITTSBURG, PA.

Since the beginning of my dental career I have tried all means at hand to relieve pain, and my efforts have repaid me many fold, not only in gratitude from my patients but because I can do better work and shorten the sittings, thereby preventing strain on myself and saving my patients fatigue and shock. Patients leave the office not in a state of dental fatigue, but generally happy in the thought that they can return and have the remainder of their work done without suffering. Patients whose teeth have been carried to the limit with gutta percha and cement because they were not able to endure the agony of having the cavities prepared for permanent fillings, finding they are not to be hurt, will continue to come back until their mouths are in good condition; they are willing to allow me to undertake more extensive pieces of work. The old adage, "To do thorough work, you must hurt," should be reversed—"To do thorough work, you must not hurt." There is a very small percentage of patients who will undergo the pain of having a cavity thoroughly prepared along scientific lines.

Many inlays have failed from improper preparation, and not always because of the lack of knowledge. The operator, trying to avoid sensitive parts, depends too much on cement adhesion instead of on mechanical anchorage as well as cement.

Gratitude. If you wish your patients to speak well of you behind your back, don't hurt them. If you want to have them heap abuse upon you, torture them while they are in your chair. Is it not a pleasure to you to have a patient leave your chair saying: "Doctor, that was grand! You did not hurt me!"? It partly pays you for the operation. On the other hand, think of the patient who remarks, "You almost killed me!" and who, whenever your name is mentioned, has unkind things to say.

You can do a beautiful piece of work and find that it will not be appreciated so much as your efforts to alleviate pain. A filling at the gingival line on the buccal or labial surface will be pointed out with the remark, "My! oh my! how that hurts!" It may be a beautiful filling, but it is not the workmanship that is considered, but the suffering endured while the filling is being put in.

Dentistry at best is very trying, and a few words of gratitude once in a while makes our lives happier. Every man who is inflicting pain undergoes severe strain, and in time that nervous strain will break down anyone, no matter how strong he may be. I have never been able to inflict pain without undergoing a strain. Many times I have lost sleep thinking of how I would excavate a buccal or labial cavity that could not be touched with an instrument without causing a wince. You all have had the same experience. There are patients whom you dread to see come into your office, because of the worry they cause you. These are cases in which we should be able to work without inflicting pain. They sap our nervous energy, put us in an irritable state, and send us home exhausted at the end of our day's work. If we can get through the day without such worries, we feel better, are happier, treat our patients better, and everything goes along smoothly.

MEANS OF INDUCING ANESTHESIA.

The days of trying to desensitize cavities with hot air and topical applications of caustic soda, carbolic acid, formalin, cocain, sprays, and especially with sharp burs, are about over; at least they ought to be. These means are not practical and cannot be used with success. Sharp burs are good things to have for rapid cutting, but even with sharp burs you cannot excavate sensitive dentine without inflicting pain. They will alleviate pain but very little no matter how slowly you run your bur, or how delicate a touch you may have.

Cataphoresis has been tried, and found wanting. The rubber dam has always to be applied, and there are places where it cannot be used. Cataphoresis takes a great deal of time, the patient has to sit perfectly quiet, which is a great strain, and there is more or less pain connected with the application of the current; also you may cause the pulp to die at times, even after half hour's application, the cavity will not be desensitized. Cavities below the gum line, along the buccal surfaces of upper and lower third molars, are simply out of the question with cataphoresis. The different sprays, such as ethyl chlorid and the Van Wyck-Kerr ether spray, will desensitize a cavity, but not without a good deal of time and patience, and with more or less pain in the majority of cases. The apparatus and the disagreeable odor of the ether are very objectionable to the patient. I have made an effort to give a fair trial to anything new that I have heard

of along this line, and have abandoned them all, except the high-pressure syringe and general anesthetics, especially nitrous oxid and oxygen—but never chloroform! To my mind, anyone who administers chloroform or permits a physician to administer it in his chair, is very foolish, and takes a great risk. Every month you can read of a death by chloroform that occurred in some dental office. Why should we administer chloroform, which shows a death rate of about one in three thousand, when we can administer nitrous oxid and oxygen, which has absolutely no death to its discredit?

Right here I want to recommend to you reading Dr. Wm. H. DeFord's new book on "General Anesthetics in Dentistry." No dentist who contemplates using a general anesthetic in his practice should be without it. He says: "Bold in other directions, commendably progressive in all that relates to manipulative ability and artistic development, the dental surgeon shrinks from anesthetics. He cuts living tissue, lacerating the nerves themselves, 'performing laparotomies upon the teeth,' so to speak, and the anesthetic usually employed is that of a witty speech or an amusing story, while the patient suffers, cringes, agonizes almost to the state of collapse. In this enlightened age no surgeon except a dental surgeon, permits a patient to undergo without an anesthetic, tortures equal in severity and duration to which one submits during the average dental operation."

Dr. Rhein recently reminded us that we as a profession occupy a unique position, inasmuch as we claim to have first introduced the benefits of general anesthesia by means of nitrous oxid, and yet today we find ourselves in the lamentable position of being subject to the criticism of the medical world because our work is so much dreaded and feared by patients. Dr. G. V. I. Brown said that if he should resume the general practice of dentistry, he would use nitrous oxid a thousand times where formerly he used it once.

NITROUS OXID AND OXYGEN.

The majority of dentists are averse to administering general anesthetics. They say, "I don't extract teeth, and have no use for a general anesthetic." Extracting is a small part of our practice. I do not average one extraction in a month, yet probably administer an anesthetic, nitrous oxid and oxygen, every day in my practice, principally for the excavating of sensitive cavities. This has given me more satisfaction, afforded me more gratitude from patients, and

helped me out of more tight places than anything else during my experience in dentistry. It will do just the same for everyone who spends a little time in learning how to administer it. Nitrous oxid and oxygen can be used in any painful operation that comes under the head of operative dentistry, such as excavating sensitive dentine, exposing congested pulps, lancing abscesses, desiccating cavities, amputating roots, and extracting teeth. The results are always positive. If you get your patient in the proper state, you can be sure of painlessly excavating cavities that would otherwise not bear the touch of cotton.

The value of this method consists in that it is universal. First get the confidence of your patient; this is absolutely essential for success. Every man has his own way of doing this. If your patients believe in you, you will have little trouble. If a patient presents for the first visit, I have found it a good plan to study him and get a good idea of the temperament with which I have to deal, before adopting any manner of procedure. If the patient has had some unpleasant experience with an anesthetic, allay his fears. Tell him that the anesthetic which he is to take is nothing like ether or chloroform, that there will be no bad effects, that it is perfectly safe, that he will not become unconscious, and will feel perfecly normal a few moments afterward. Show him that you are sincere in trying to relieve him from pain, and you will have little trouble. Once a patient has taken nitrous oxid and oxygen for the excavation of a sensitive cavity, your troubles with that patient will be over.

Never mention laughing gas to your patients. Generally they have heard some exaggerated story of laughing gas, and you might excite them more. If they ask what gas it is, simply say it is nitrous oxid and oxygen.

See that your patient is comfortably seated and can breathe freely; take the ordinary precautions; adjust the nasal inhaler, and tell him to inhale and exhale through the nose, till a peculiar feeling comes over him. Impress on him not to become alarmed at the odd feeling, that he must be in that state in order to get the proper effect. Have him inform you at the approach of the feeling and proceed to operate. If you cause pain, have the patient breathe in a little more; very seldom will you need to let him become unconscious to accomplish the desired result. Have your patient keep his eyes open, reassure him

by talking to him, and you can operate in this state almost indefinitely. Of course you must have an assistant to operate the gases; you yourself must devote your entire attention to your patient.

I have been using this method with very few exceptions, for three years. In that time I have had only two cases that I would really call failures, and only in two cases nausea was experienced. One of these was a young man to whom I administered the anesthetic for the accommodation of a surgeon, and whom I kept in an unconscious state with nitrous oxid and oxygen for one hour and twenty minutes, using three cylinders of nitrous oxid and one of oxygen. The patient had not been prepared for an anesthetic. In both cases the sickness was of short duration. Today I would be inclined to relinquish general practice rather than conduct it without the aid of nitrous oxid and oxygen.

A surgeon who had a serious operation to perform on a patient to whom he was afraid to administer any other anesthetic asked me to administer it for him in one of the hospitals in Pittsburg last July. I kept that patient under the influence of the anesthetic for about thirty-five minutes, for the removal of a cancerous growth around the kidney. The patient seemed perfectly rational before being removed from the operating table. Just a few minutes after the operation I spoke to him and asked him how he felt. The surgeon subsequently ordered one of these anesthetic apparatus, and just before I came away he performed two laparotomies, and was delighted with the result. Neither patient was nauseated, and both seemed perfectly comfortable.

One of the arguments against this method of anesthesia has been that yau cannot get relaxation enough to operate on the abdomen; but this is not true. Dr. Teter has proved it, and the surgeon of whom I spoke came back to Pittsburg and performed these very operations.

GREAT ADVANTAGE IN HEATING THE GAS.

It has been proved that by heating the gas you can reduce the amount required for anesthesia from one-third to one-half; moreover, the patient takes it much more easily. I use the Teter outfit, which I think is the most complete. Dr. Teter recently reported 13,000 operations with nitrous oxid and oxygen, which is very different from nitrous oxid alone. I think the heating was first suggested by Dr.

DeFord, who has been administering nitrous oxid for about twenty-six years. The results are wonderful; the anesthetic does not irritate the patient's throat, he is more quiet, and the mixture is much more effective. The apparatus has four cylinders, and there is a bag of nitrous oxid on one side, and one for oxygen on the other. The gas passes into the bags from the cylinders, and from there into a mixing chamber in the center; from this mixing chamber it is breathed by a tube passing into the nostril. This copper tube is immersed in water at 120 degrees, which is sufficient to warm it to the required degree.

The Teter inhaler, which I generally use, is not in the way, and you can go ahead with the operation without paying attention to the inhaler. When I wish to excavate a labial cavity, or if a patient has a short lip, or cannot breath freely through the nostril, I use a Clark Correct Inhaler. This inhaler is not often needed, but when you want it, you want it badly. It is a wise precaution to have a large supply of these inhalers at hand, to suit different cases.

A young lady's teeth had been temporarily filled with gutta percha. She was afraid to have them excavated. When she came to me she was very nervous, but I gained her confidence by taking out under cocain anesthesia a small root which she had in her mouth. I proved to her that I could do that without hurting. Then I told her I would excavate a couple of cavities with the aid of nitrous oxid and oxygen, and I did so without hurting her. After that, I had absolutely no trouble. She had two weeks in which to get ready for going to college, and I did a lot of work for her in that time.

For a young man, I inserted thirty-odd fillings. He was a comical sort of fellow, and he said, "This is a very attractive way of accumulating a jag with no hang-over!"

In one family I gave the gas to the father, who was over sixty years old, to the daughter, and to both sons.

One lady wanted to be absolutely unconscious before she was touched. On the back of her record she wrote a little note, in which she stated that it afforded her great pleasure to fill out the blank, and that she could not find words to express the relief that nitrous oxid and oxygen had given her.

HINTS.

The high-pressure syringe is an instrument which, in my esti-

mation, no dentist can afford to be without. There are many cases in which it can be used, especially in removing pulps in the preparation of abutments for bridge work. It will save a wonderful lot of time for you, and will practically eliminate the pain. I have used it a great deal in the preparation of cavities, but have found nitrous oxid and oxygen more practical for that purpose. It takes less time.

There are two items which I should like to emphasize, namely, the kind of pit to make and the kind of point to use. The first points which were gotten out were tapered so as to fit tightly in a hole drilled with a small round bur. Dr. Porter of Oil City, Pa., suggested to me the use of a needle without any taper, and a tapered hole in the tooth. This method has been a wonderful improvement over the straight-side hole and tapered needle. The square point cuts into the sides of the tapered hole and makes a perfectly tight joint, which maks it possible to apply much less force to keep contact. The point of the needle is the same as an ordinary hypodermic point, necessarily making the pit small.—*Cosmos,* March, 1910.

THE POST-GRADUATE SCHOOL OF DENTISTRY OF BERLIN.

A Post-Graduate School for holders of German or foreign State certificates in dentistry will be opened this April at 22 Bülowstrasse, Berlin.

The instruction will be in charge of the following dentists: Dr. Konrad Cohn; Professor Dr. Dieck; Professor Guttmann, Court Dentist; Professor Hahl; H. J. Mamlok; Professor Dr. Wilh. Sachs; Dr. Erich Schmidt; Professor Dr. Schröder; Professor Dr. Williger; Willmer, Court Dentist.

The new school will have twelve rooms at its disposal.

Its purpose is to give all its visitors an opportunity of doing advanced scientific and practical work, of acquainting themselves with the latest improvements and inventions in surgical, technical and operative dentistry, including Röntgen laboratory, and of familiarizing themselves with the application of these improvements by actual treatment of patients.

A dental infirmary is to be connected with the school so that there will be no lack of material for instruction.

Further information as to the Post-Graduate School will be given by Dr. Erich Schmidt, 133 Potsdamer strasse, Berlin.

CHARITY MAINTAINS DENTAL DISPENSARY.

United Charities Inaugurates Movement Whose Primary Object Will be to Treat Poor Children's Teeth and Elevate Physical Condition.

The first dental dispensary in the United States to be wholly equipped and maintained by a charity organization has been opened by the United Charities of Chicago, through its stock yards district office, 723 West Forty-seventh Street. Sixty members of the Englewood Dental Society, which is affiliated with the Illinois State Dental Society have pledged themselves to do the work of the dispensary, each man giving a half day of his time, in turn.

The dispensary will devote the greater part of its time to children, although in special cases the teeth of adults will be cared for. Tooth brushes will be sold for a cent or two, two of the largest manufacturers of toilet preparations have promised a liberal supply of dentifrice to be given to the children treated, and little pamphlets will be issued to the children telling them how to care for their teeth.

Children's Names are Obtained.

The dispensary is the outgrowth of an investigation into the needs of children of indigent parents in the "back of the yards" district. The names of scores of children who have defective teeth have been obtained. Many of these children are backward pupils of the schools of the district, and to defective teeth is laid the blame for their mental defects.

The poor physical condition of a number of children was traced directly to bad teeth, and in many cases hospital treatment has been found necessary. In a few cases treatment had been deferred so long that necrosis of the jaw resulted.

Many Cities are Interested.

Chicago has been slow to take up the work. Rochester, N. Y.; New York city; Reading, Pa.; Philadelphia, Pa., and Cleveland, Ohio, have well organized free dental dispensaries, but they are not wholly maintained by charitable organizations.

A $2,000,000 contribution for this special charity was announced in Boston two weeks ago. Some of the large cities of Europe, notably Berlin and Strasburg in Germany and St. Petersburg, Russia, have engaged in free dental dispensary work on an extensive scale.

CARE OF THE TEETH.

BY T. W. DEE, D. D. S., HOUSTON, TEXAS.

Dental caries may be defined as a disease of a tooth characterized chiefly by the production of a localized cavity, or an area containing decalcified tooth structure and due to a combination of acid fermentation and liquefaction, produced by disease germs.

Decay of the teeth dates far back into the ages and examination of skulls of mummies in the Britism museum, dating 2800 B. C. shows well marked caries and other dental diseases. Caries appears in the skulls of all people, no matter what the degree of civilization where the principal diet is vegetables—cooked, starchy food.

The causes of decay are divided into two classes—exciting and predisposing. Until as late as 1882 the general belief of the causes of decay of the teeth was from an acid reaction. This theory was first advanced up until 1754. From this time until 1835 it was believed to be caused by inflammation or gangrene of the tooth. But it was not until Miller, in 1882 and 1890, demonstrated to the world that decay of the teeth was caused by a disease germ the same as many other diseases of the present day. Miller isolated these germs, cultivated them and produced decay in teeth in his laboratory, thus proving beyond a doubt that a germ was the cause of dental caries. Miller demonstrated that in all cases of dental caries micro-organisms may be seen under the microscope in the dental tubules of the carious tooth structures, and that bacteria exist in great numbers in every mouth.

That diet has to do principally with decay of the teeth has been demonstrated many times. Dr. Miller's compilation of statistics covering several years of research shows that the influence of carbohydrates on the teeth is one of the exciting causes of decay. The races consuming a fish and meat diet almost exclusively—e. g., the Esquimaux—are recorded as having but about 3 per cent of caries, while those using a mixed or vegetable diet have from 10 to 40 per cent of caries. A most convincing example of this is given of two related tribes living on either side of the Andes in the Argentine Republic and Chili, respectively. The former, a cattle-breeding and meat-eating tribe, were practically free from dental caries, while the latter, living on mixed foods, including vegetables, sugar, etc., 19

per cent suffered with decayed teeth. Thus it will be seen that races that indulge in the use of soft food, where little effort is necessary in the process of mastication, the percentage of dental caries is far greater than those who live on meat and fish diet, requiring ample mastication before the food is taken into the stomach. It would seem from this that the manufacturers of prepared breakfast food, predigested food, etc., are committing a world-wide crime by inducing the people to eat specially prepared food where mastication is not necessary. When the food is not properly masticated the influx of the saliva of the mouth is not so great as when thorough mastication is necessary. As digestion starts in the mouth and the saliva has its certain function to perform, it necessarily follows that we do not have the proper digestion when we do not masticate our food well, aside from the fact that the teeth require exercise the same as any other part of the human body.

It is a known fact that we inherit peculiarities in our teeth from our parents the same as other characteristics. For instance, it has been shown on many occasions that the child will inherit the massive jaws of the father and the small teeth of the mother, and vice versa. The principal trouble is with the latter, where the child inherits the large teeth of the father and the small jaws of the mother. When this condition is in evidence, on account of the large teeth and small jaws, the teeth do not have room enough to erupt regular, consequently we have malposition, crooked teeth. When this is the case the teeth tre crowded together in too small space, producing lapping of some of the different teeth, especially the anterior ones, thus affording lodgment for food products, the accumulation of fungi, the development of bacteria and finally decay. After a child reaches the age of twelve or fourteen and this condition of crowded or crooked teeth presents itself, they should consult the family dentist and have them regulated. Do not wait till nature straightens them out—she will not do it. At this age it is a very easy matter for the experienced dental surgeon to straighten the teeth, producing regular outlines and curves for their accommodation and position which will serve to prevent future decay.

Few people realize the great amount of decay prevalent in children's teeth of the present day, and there are more decayed teeth of of the present generation, especially in the United States, than at any other time in the history of the world. There must be a cause for

this. As already stated, the people who subsist on a vegetable diet, neglect the teeth and do not masticate their food, are the class who suffer most with caries. If the child of today was given corn bread and hard crusts to masticate rather than soft, mushy particles of food that require little or no mastication, there would be less decayed teeth.

In order that some idea may be had of the amount of decay found in the teeth of school children we quote from this month's *Cosmos,* wherein this statement is made: "It was found on examination that nearly 80 per cent of the children in Great Britain's industrial schools were suffering from decayed teeth. Dr. George W. Cook reports after investigation of 220 mouths, that 171 contained the bacillus tuberculosis, thereby showing conclusively that even that dreaded plague may enter the system by way of carious dental organs.

"In the third annual report of the city of Strassburg, of 2,269 children examined, between the ages of three and four, only 362 had good teeth—less than 16 per cent. Of 2,103 between the ages of six and eight, only 160 or 7½ per cent. The report goes on to state that this third annual report shows a remarkable improvement in the general health of the public school children—less headache, earache and stomach troubles." This remarkable decrease in one year's time was due to free dental clinics and attention to the teeth of the children.

Again we quote: "In Germany, of 20,000 children between the ages of six and sixteen, 95 per cent had dental caries in alarming proportions." Statistics show that in the United States dental caries exist to a much larger extent than in any of the foreign countries.

MAN FAST LOSING HIS TEETH.

The toothless man is foretold by Horace Fletcher, who declares that the American people are losing their teeth and that the same process of dental decay is going on among all civilized nations. The investigator of the future who may happen to compare the skulls in the burial places of the ancient mound builders with those exhumed from present day cemeteries will be impressed by the contrast.

The mound builder's skull has massive and symmetrical jaws for the reason that each jaw contains sixteen teeth, well developed, and well worn by much usage, but intact, free from decay, and held in place by strong roots. The present day skull rarely if ever contains thirty-two teeth, or if it does it is but a short time that the thirty-two are present. The latest comers, the wisdom teeth, one at each end of the arch of each jaw, remain but a short time, owing to the fact that they begin to decay before they have emerged from the jaw. It is rare indeed that there is a person possessing thirty-two sound teeth.

The wisdom teeth are almost always defective and a source of much trouble. The roots are not properly developed and there is often not room enough for them in the jaw. In a few instances nearly all the teeth are found to be defectively organized, misshapen, and misplaced.

The savage man and the wild beast of the forest have no use for a toothbrush or for dentifrice. The primitive man masticates his food instinctively. But the modern civilized man has so long neglected his teeth and has cultivated degeneracy to such a degree that the utmost care must be given them to prevent their total loss. As long as the tongue is coated and the mouth swarming with destructive bacteria which are capable of producing dental decay the alimentary canal and the whole body are exposed to infection.

Every portion of the food or drink which passes through the mouth carries into the stomach millions of these disease-producing bacteria. The toilet of the mouth is pronounced far more important than that of the hands and face or any exterior portions of the body.

THE ORAL LODE.

Of wealth in quest though we many roam
On wintry path and tropic road,
Dentiticus remains at home
And works the Oral Lode.

Let others slave and delve and toil
In sweat of brow for gold's abode.
Dentiticus packs in the foil—
He works the Oral Lode.

O, Oral space, what makings lie
Of nuggets in thy gloomy wreck!
Dentiticus will quickly spy
A cavity in crown or neck.

Of molar, lateral, cuspidate—
No matter where, there's no escape;
With instruments all up-to-date
Dentiticus begins to scrape.

Of all disease, what can be worse
Than aching tooth to discommode?
Dentiticus relieves your—purse
By "boring" in the Oral Lode.

Alladin, when he rubbed his lamp,
Beheld no miracle like this—
A tooth protruding through a clamp,
"Painful?" "O, no, it's perfect bliss!"

O, what are mining schemes to him—
Klondike's and Cobalt's wealth he'll cuss;
Alaskan hermit, starved and grim,
Appeals not to Dentiticus.

J. D. ROBERTSON.

NECROLOGICAL

Dr. C. B. Mpeller, a prominent dentist in Cuero, Texas, died May 13th after a lingering illness of tuberculosis. He is survived by a widow and infant son.

Dr. William Krause, a practicing dentist in Philadelphia, Pa., committed suicide June 1st by inhaling illuminating gas. Despondency over ill health was the cause.

Dr. Leatherman, formerly a dentist at Bardstown, Ky., died at his home in Louisville, Ky., May 31st. He is survived by a wife, two sons and three daughters.

Dr. H. W. Hoopes, a well known dentist in Baltimore, Md., died May 28th. Death was due to pneumonia. He is survived by a widow and one daughter.

Dr. C. H. O'Connor, a well known dentist in Rhinelander, Wis., died of apoplexy. The doctor was thirty-nine years old.

Dr. H. M. Matzger, of Dayton, Washington, member of the State Board of Dental Examiners, and pioneer of Dayton, died May 21st after an illness of thirty hours, of kidney trouble. He is survived by a widow and eight children.

Dr. D. A. Macmullen, a practicing dentist of Santa Ana, Cal., died May 15th at San Bernardino, where he went for his health.

Dr. Roswell O. Stebbins, one of the foremost dentists of New York City, and an arctic explorer and traveler of note, died May 24th.

Dr. C. H. Darby, a practicing dentist in St. Joseph, Missouri, died May 14th. The doctor was sixty-six years of age and is survived by a widow, a daughter and two step-daughters.

FOR RENT—Old established dental parlors in a town where a good man can make money. Address at once. N. C. Jorgenson, Cando, N. D.

FOR SALE—Ethical practice and office outfit. Established four years. All strictly modern, associated with M. D., reasonable rent, good location, reason for selling, going into another business; inhabitants 18,000, 92 miles from Chicago. Address, care American Dental Journal, 39 State street, Chicago.

WANTED—A partnership with man with practice of over $5,000 per year, in state of either West Virginia, Maryland or Tennessee, by a good, quick operator. Four years' practice in West Virginia. Single. Address, care of American Dental Journal.

FOR SALE—A $5,000 Michigan advertising office, long lease, low rent; inventory, $350. A bargain at $500. Address No. 1000, care of American Dental Journal.

FOR SALE—Practice established ten years; going abroad; outfit modern; switchboard, compressed air, furnace, fountain, cuspidor, electric engine, lathe, etc. City, 50,000, Iowa. Reception room shared with a leading physician. Bargain; sacrifice, $600 quick. Address, "Abroad," care American Dental Journal.

FOR SALE—One-story brick office building, with best practice in city of 3,500, located in heart of Blue Grass section of Kentucky. Fine opening for capable ethical man. Address F. O. Humphreys, Harrodsburg, Ky.

POSITION WANTED — Competent dentist, graduate '05, desires position in ethical practice, with view of investing. Chicago preferred. Address "M. L. C.," care American Dental Journal.

WANTED—Interest in advertising office in city, not over 300,000, smaller preferred, by up-to-date, reputable dentist; twelve years' experience managing one of the largest dental offices in country; reason, tired of large city. Address "Change," care American Dental Journal.

FOR SALE—Hurd gas outfit. First class condition, $15.00. One S. S. W. Wilkerson leg base chair, arm bracket and cuspidor included. $35.00. Write for further particulars if interested. Address "E. L. S.," care American Dental Journal.

FOR SALE—$95.00 Ransom & Randolph Cabinet, No. 38. All refinished. Price, $50.00. Also many other bargains in cabinets. Full particulars if interested. Address, "B. J. H.," care of American Dental Journal.

FOR SALE—One Ranson & Randolph cabinet No. 28; good as new; cost new $35; will take $15 cash. Address "Cabinet," care American Dental Journal.

FOR SALE—Gasometer tank, iron stand complete with tubing and inhaler, ready to use. How much? Address "S. M.," care of American Dental Journal.

WANTED—A-1 Prosthetic man, also first class operator. Ethical practice. Fine city and climate. Opportunity for right man. Address "Texas," care of Ameircan Dental Journal.

FOR SALE—Up-to-date dental outfit, town of 2,500, in the famous Palouse wheat belt, Washington. Modern electric equipment; practice established 20 years; $1,250 cash will buy outfit; a snap for the right man. Don't write unless you mean business. Address Washington No. 1, care of American Dental Journal, 39 State street, Chicago, Ill.

FOR SALE—Dental office in a small town in western Iowa. Rich farming country. Only small amount of cash required; established six years. Owner desires to leave state and go west. Address for particulars, West, care American Dental Journal.

FOR SALE—Ethical practice and office outfit. Established four years. All strictly modern, associated with M. D., reasonable rent, good location, reason for selling, going into another business. Beloit, Wis., inhabitants 18,000, 92 miles from Chicago. Address "P. K.," care American Dental Journal, 39 State street, Chicago.

FOR SALE—Or will exchange, dental practice located North side, Chicago, for practice in Texas. Will sell at $500.00. Address "Rix," care of American Dental Journal.

WANTED—A good all around laboratory man. Will pay a good salary to the right man. Address "Laboratory," care American Dental Journal.

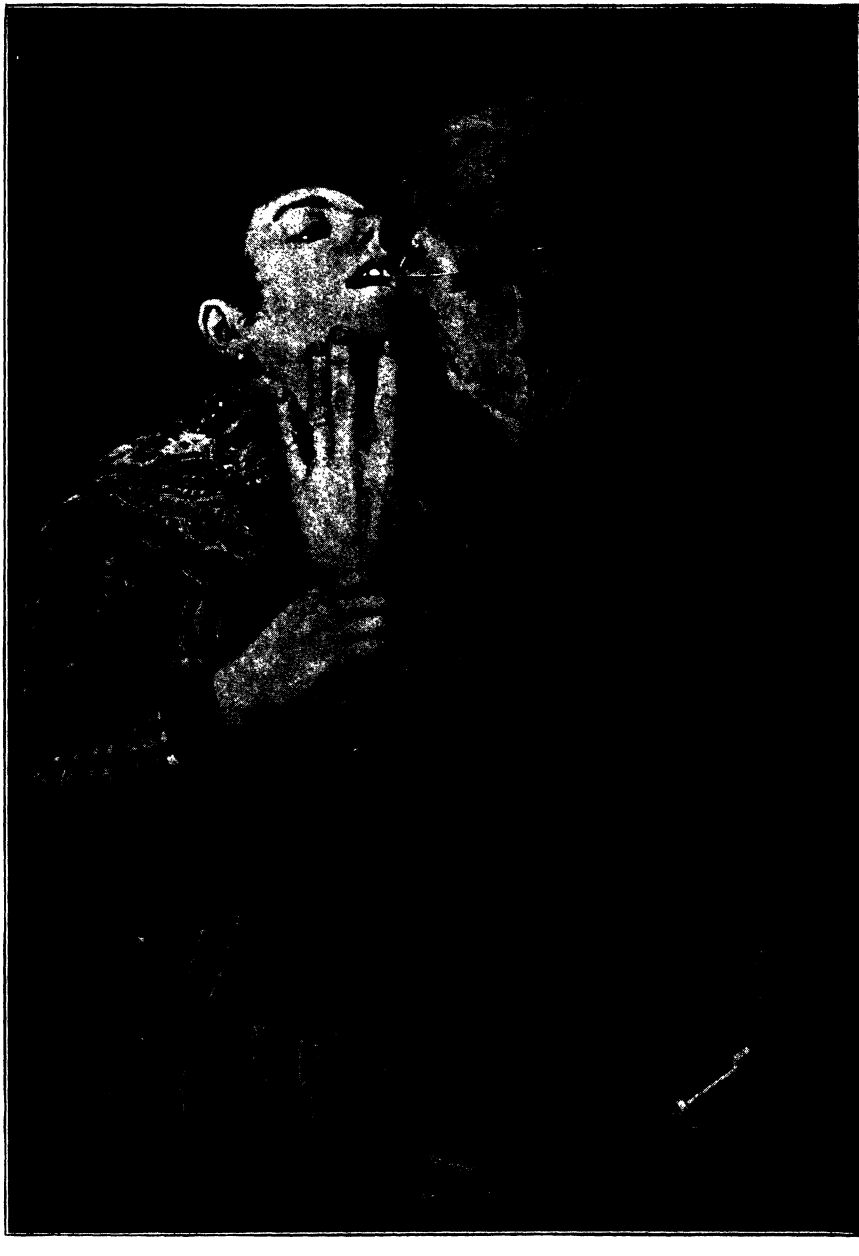
FOR SALE—In Oklahoma, a modern ethical dental practice, substantial cash business, $4,000 per year, established nine years; population 12,500; only three other dentists, all congenial, with same fees. If you mean business, write now. Address Okla., care American Dental Journal.

FOR SALE—Advertising office and practice in Washington, D. C., on the largest business street. Office thoroughly equipped and outfit nearly new. A good investment for any advertising man. Address Interested, care American Dental Journal.

FOR SALE—I am going to retire from practice, I have a good outfit in a fine location that I will sell on easy terms at invoice to right party. Have been in practice eighteen years and can swing a large amount of business to buyer. Address "X," American Dental Journal, Chicago.

FOR SALE—Dental office and practice, established four years. Favorite Columbia Chair, Fountain Cuspidor, Clark R. & R. Cabinet, cost $85, Hurd Gas outfit, Full Laboratory outfit and reception room furniture. Average receipts, $275.00 per month. Price, $700.00. Address "B. J. B.," care of American Dental Journal.

FOR SALE—Dental office in town of 10,000, in Nebraska. Ethical practice, $3,000 per year. Price, $1,000. Will give terms. Address "Walk," care American Dental Journal.



QUESTIONABLE CONFIDENCE

(From "The Cigrand Historical Collection)

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