

ITEMS OF INTEREST.

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Notes from the Profession.

Local Anesthesia by Nitrous Oxide: A Convenient Method of Applying It.

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And its Discussion in the N. Y. Odontological Society, as found in "The International."

SOME time ago it occurred to me that a blast of nitrous oxide, under high pressure, thrown on a tissue might have the effect of producing local anesthesia by depriving the tissues of moisture and thus rendering them insensible to pain. The pressure of the gas in the cylinders, in which it is supplied in the liquefied form, is at ordinary temperatures about one thousand pounds to the square inch; that is, when the cylinder is full. This is ample for the purpose. I have attached to a cylinder an apparatus which I have devised for the application of the gas, consisting of a flexible tube of sufficient strength to withstand the enormous pressure. The gas is forced, on opening the valve, through detachable tubes of various shapes and conveyed to the cavity, where it is applied by means of an automatic atomizer through a very small aperture.

After experimenting on myself for awhile, I became fully convinced of the efficacy of the device and the value of the idea. I then began to use it on others as the opportunity offered, and was delighted to find that previous observations of its effects were confirmed. Exhibited as indicated, I have employed nitrous oxide as a local anesthetic many times in my practice, with the most gratifying results in every case except two, in one of which the patient was hysterical, and the other in such a highly-wrought state of nervous excitability that I was unable to apply the blast properly. To show the difference in preparation of a cavity without and with the gas let me cite a typical case: Patient, male, aged forty-five years, had been for many years a great sufferer from nervous dyspepsia, complicated with functional derangement of the heart. At times, his life was despaired of through heart failure. Without the aid of nitrous oxide, when I was excavating a cavity in one of his teeth, owing to the extreme sensitiveness of the dentine, his overtaxed and excitable nervous system gave way, his heart stopt beating, he became black in the face, and writhed in convulsions. It was only by the most active efforts that the circulation was restored and the patient revived. A temporary filling was inserted and patient dismissed.

He again presented, on a subsequent occasion, with an upper central incisor, one-third of the crown of which had been lost by decay. The pulp was living, but with only a thin film of disintegrated dentine over it. On attempting to excavate, the pain produced was so excruciating that the patient, rising from the chair, declared that he would lose the tooth sooner than endure the torture. Thinking this an excellent opportunity to test the efficacy of the nitrous oxide as an obtundant, I endeavored to persuade him to allow me to try it. At length he reluctantly consented, but it was evident from the rigidity of his muscles, as he braced himself in the chair, and the frightened expression of his face, that he had no faith in the success of the experiment. The blast was applied, and in three seconds the constrained look of the face gave way to a peaceful smile, and the patient exclaimed that he was

free from pain. Then came a general abatement of the nervous symptoms, the muscles lost their rigidity, and the patient assumed a quiet, restful position. After applying the blast ten seconds, I began the task of removing the decay and preparing the tooth for filling, working as fast as the engine would operate the bur. The pulp was fully exposed, and a small drop of blood exuded, but the hemorrhage was checked without the aid of a styptic. In two minutes the cavity was ready. The pulp was capt and the entire filling completed without the slightest expression of discomfort from the patient, except when the gold was being finished at the neck of the tooth a half hour later, which indicated the return of the pulp to its normal condition.

This tooth was carefully watched, and more than a year after the operation it was still in a perfectly healthy condition, and the first evidence of discomfort from it was yet to be felt. I have since treated several other teeth for the same gentleman by this method, and in each instance with equally satisfactory results.

A very similar case was that of a physician suffering from extreme nervous exhaustion, for whom I operated, under like conditions, in the same manner, except that it was not necessary to expose the pulp of the tooth. The operation was absolutely painless, and a year and a half afterward the tooth had not manifested the slightest pain or discomfort.

Many other cases have occurred in my practice where the nitrous oxide blast was equally effective in obtunding the sensitiveness of the dentine. In fact, it has never failed of complete satisfaction except in the two instances before referred to, and these were so exceptional in their conditions that I feel that they should not be permitted to militate against the value of the treatment.

My experience is that sensation is perfectly restored to the obtunded tissue in from three to ten minutes after the application, in which respect the local action is very similar to that which follows the administration of nitrous oxide as a general anesthetic. The duration, as also the degree, of the loss of sensation depends on the length of the exposure to the blast. So far, I have never observed any untoward after effects which could be attributed to the exhibition of the nitrous oxide. It appears to be entirely innocuous, after the temporary effect passes off.

Considering the comfort to the patient, the ease and satisfaction to the dentist when operating on the most sensitive tissue, and the rapidity of work thus rendered possible, as promised by the method described, it would seem to hold forth the hope of painless dentistry to thousands of sufferers who never visit the dental office, through fear of the torture they expect to undergo.

The advantages which I claim for this method, of producing local anesthesia by nitrous oxide under high pressure, may be briefly summarized as follows:

The action is complete and certain. The tissues are deprived of moisture and perfectly obtunded.

Unless the application is pushed beyond all reason (which might result in the freezing of the parts) no injurious effect is produced on the tissue, as when ether, alcohol, chloroform or carbolic acid are employed.

The application is not followed by inflammation. The patient is not rendered unconscious by it, and there is no unpleasant odor or soiling of the tissues, so objectionable in the use of the other agents.

The parts being perfectly dry facilitates the most careful examination.

Compressed or liquefied nitrous oxide is always available in the cylinders supplied to dentists.

Neither the nitrous oxide nor its action is affected by the temperature of the surrounding atmosphere, nor is it combustible or explosive.

Just how far the advantages of the method can be applied in the major operations of surgery, as the removal of tumors and amputations, is not yet determined. It is among the possibilities that the blast may be continuously applied in advance of the knife, so as to render the parts insensible, and at the same time reduce the

loss of blood to the minimum. Certainly the lancing of boils or carbuncles may be accomplished by its aid easily and painlessly.

Whether the action of nitrous oxide, as herein set forth, is chemical or mechanical I am as yet unable to state, but by experiments, now in progress, I hope to arrive at a clear solution of the question. Thus far I am led to the belief that anesthesia is the result of dehydration.

If the experience of others bears out our testimony, it would seem reasonable to expect the general adoption of the method in dentistry and minor surgery. When so harmless an obtundent can so readily be applied, it would be unwarranted cruelty to inflict pain.

There are other fields in which this application of nitrous oxide to tissues promises untold usefulness. Thus, in microscopic technique, the preparation of tissues for making sections for examination formerly required months, whereas now it is accomplished in a few weeks by using alcohol for the extraction of the moisture, the length of time varying with the density of the tissue to be acted on. But even this, as will be easily understood, is frequently unsatisfactory, as often an immediate examination of a suspected tissue is desirable so that its character may be determined promptly. Ether spray from a hand-atomizer has been used to some extent for quick work, but it is far from answering the requirements, and its use has been practically abandoned in some laboratories. It may be found that the nitrous oxide blast will be useful in this direction.

DISCUSSION.

Dr. Edward S. Niles.—I have recently been interested in an apparatus for destroying or obtunding the sensitiveness of dentine; and just as I was about leaving home the man who patented this apparatus was in my office, and I said, "If you will lend me one of your appliances to take to New York I will give it to some of my professional friends there to test." He consented, so I brought it with me. I left it with Dr. Bogue, who suggested that it might be of interest to this meeting. I will give you first the history of the apparatus. It is an invention of a man in Providence, R. I. First used for this purpose about a year ago; it is an outgrowth of an apparatus used in the practice of medicine to keep certain parts of the body at a given temperature, either by moist or dry heat. That is an entirely different appliance from this, and especially designed for use in the practice of medicine. The principle of this apparatus is simply the application of steam to sensitive dentine, and is very simple. By means of an alcohol lamp under a small boiler, steam is generated and forced through a small tube, drawn to a point about equal in diameter to that of a hypodermic syringe. This fine jet of steam is applied to the cavity for about five to fifteen seconds. By longer application it has been used for destroying pulps and removing pulps of teeth. My personal experience with it has been slight. There are members of the profession in Providence and Boston who have used it for several months with very good results. I am, however, so well pleased with it that I have rented an instrument. It accomplishes the end with very little pain, if one has the experience to use it properly. I simply present it, gentlemen, as I think it is one of the coming things that we may need for obtunding sensitive dentine. It opens up a large field for experiment, as we can use warm applications of various solutions, alcohol, cocaine, or a large variety of things, which, in cold solution, would have little or no effect, may be made valuable as obtundents if vaporized and applied hot or warm.

Dr. Lord.—What is generally used?

Dr. Niles.—Water is generally used in the boiler.

Dr. S. G. Perry.—I am amply repaid for coming here to-night by one sight of this little clamp, which, I understand, is a device of the President. I have never seen anything of that kind before that I took very much interest in. It is a little risky for me to praise anything that I have not tried, but this seems to be a very

ingenious little device, and so mechanically correct that it must succeed. I have never seen one that could be easily adjusted and that would stay in place; but made on this principle it is bound to stay every time.

The President.—Some teeth are so irregular that it will not keep its place well.

Dr. William Jarvie.—Obtunding the sensitiveness of dentine can, I think, be accomplished in a very much simpler manner than with the device presented to-night. Let me relate a case in which I employed it to-day. The cavity was situated on the labial aspect of the second inferior bicuspid, and was so sensitive that the touch of an instrument would make the patient shrink and suffer a great deal of pain. I applied the rubber dam, and with the hot-air syringe dried the cavity perfectly; then, with a sharp instrument, I excavated the cavity with almost no pain. I think the perfect dryness of the cavity and a sharp excavator are the best and safest obtunders we can have.

Dr. Dwinelle.—The instrument that has been presented to-night reminds me of a similar one introduced to the profession years ago. It had a pendulous lamp underneath, like this, for heating the air to the right degree. It was rather a bungling affair, and very much like many other complex instruments which are made to accomplish a simple purpose. It reminds me of an anecdote of one of the Khedives of Egypt, who had a pair of gold snuffers presented to him. He hardly comprehended how to use them, but in a measure the idea finally dawned on him, and taking the snuffers, he opened them, snuffed the candle with his thumb and fingers, then put the results into the snuffers, threw up his hands, and said, "Great is Alla, and Mahomet is his prophet!" A great many intricate and useless things accumulate in our laboratories. The hot-air pendulous lamp referred to I have in my museum still, which is filled with all sorts of devices for doing things that we can often do at our fingers' ends in a moment. With these devices there is often but little relation between cause and effect, it is like shooting a mosquito with a ten-pound cannon! In reference to obtunding hypersensitive dentine I have very little difficulty. Hot air is quite sufficient in most instances, but in ninety-nine cases out of one hundred I use simple chloride of zinc. I recommended it to the profession a number of years ago. Sometimes it produces a little pain for a few minutes, but usually nothing to speak of. I apply it with perfect audacity and impunity under all circumstances. I never devitalized a pulp with it in my life. Sometimes I have used it in a somewhat heroic sort of way. I have dried my cavity and filled it full of the salt of chloride of zinc, and then, to enforce and project it into the sensitive dentine, I have applied a heated instrument to it; and without any subsequent trouble I think the sensitiveness of dentine can be easily overcome with this agent.

Dr. Cook.—How does the patient feel about it?

Dr. Dwinelle.—That is a very important question to ask. Perhaps in the majority of cases there is some pain, but often little or none; as the patients say, "none to speak of." The philosophy of it is simply this: We actually destroy for the time being the sensitive fibrils projecting from the nerve itself, the fibrils in the dentinal tubules. We have a great many cases of hypersensitive dentine which are very serious, especially at the cervical points of the teeth. I have had people come to me who could not breathe sidewise into the mouth on the teeth without pain. One of my patients told me, in drawing in her breath the shock was so great that she positively dropt to the floor and was supposed to be in a fit, tho there was no erosion apparent. In applying the chloride of zinc to these sensitive places by the gum, I first put on the rubber dam, adjust it to its place so as to draw the gum up to the periosteum, then apply the pure salt, and enforce it with a heated instrument. Sometimes, in a couple of weeks the patient has come back for a renewal, but very rarely after the second application. I have great confidence in the efficacy and safety of chloride of zinc. I am, perhaps, like the shoemaker, who thought there was nothing like leather.

Dr. Bogue.—Do I understand Dr. Curtis to announce as his belief that dehydration, or getting rid of the water in the dentinal tissue, is the most effective method of getting rid of the sensitiveness?

Dr. Curtis.—I believe it is the most complete method.

Dr. Bogue.—Further, I would ask whether his experiments show any special difference in the results obtained by whatever process the tissues are dried or the water got rid of; because we have a number of agents that have a very strong affinity for water, and we have hot air as well as nitrous oxide.

Dr. Curtis.—I do not think it would make any difference in what way the water is disposed of, as to the sensitiveness; but it does matter what agents are used as to the effect on the tissues. I mean that some of the agents employed have a very injurious effect upon the tissues, and their use is not warranted.

Dr. Bogue.—Would you kindly mention them?

Dr. Curtis.—Carbolic acid, chloride of zinc, hot air, alcohol, sulphuric acid, etc.

Dr. Bogue.—How about glycerin?

Dr. Curtis.—I have never used it. It will dehydrate.

Dr. Bogue.—How about absolute alcohol?

Dr. Curtis.—It will also dehydrate. I believe alcohol will produce subsequent inflammation. Its use is followed by pain.

Dr. Perry.—I have a cylinder in my cellar in which I condense air. We keep it on tap, at from twenty-five to fifty pounds pressure. I would like to ask Dr. Curtis whether we might not expect to get the same result from that condensed air that he gets with nitrous oxide?

Dr. Curtis.—I do not think a pressure of fifty pounds sufficient to produce the desired effect. High pressure is essential. The rapid expansion of nitrous oxide produces increased coldness over that of air. Where the dehydration occurs, the moisture is taken up and carried off.

Dr. Perry.—Would you get the same effect by using air alone under the same pressure? You claim that there is nothing especial in the gas itself.

Dr. Curtis.—I think not, as air is not as expansive, consequently could not be as cold.

Dr. Dwinelle.—You do not claim that the nitrous oxide has any sedative effect?

Dr. Curtis.—No, sir.

Dr. Dwinelle.—You get the coldness from the great degree of evaporation produced?

Dr. Curtis.—Rapid evaporation.

Dr. Bogue.—I am glad that Dr. Curtis' experience is what it is, for, in continuing some experiments begun some six or eight years ago with veratria dissolved in absolute alcohol, to which an equal volume of glycerin was added, I happened to stumble across the idea of adding an equal volume of cocaine, carbolic acid, and tannin, and I found almost the same results that Dr. Curtis speaks of. I mention it in case some of my professional brethren could not easily get a cylinder of nitrous oxide. This you can get.

Dr. Perry.—Is that successful?

Dr. Bogue.—It is in the majority of cases.

Dr. Perry.—What is the formula?

Dr. Bogue.—Veratria, such quantity as you please, dissolved in absolute alcohol, to which add an equal volume of glycerin and carbolic acid. A few months since I took cocaine, *quantum sufficit*, dissolved it in absolute alcohol, and added tannin to saturation; to this I added carbolic acid and glycerin, an equal volume of each; the same idea being present that Dr. Curtis has advocated. Of these two mixtures I take equal quantities, mix them together, and put them into the cavity. If I put it into a large cavity and go to work at a small one, by the time I have finished the small one the other is pretty near devoid of its sensitiveness.

Dr. Perry.—What element of danger is there in the remedy?

Dr. Bogue.—Too large a dose.

Dr. Perry.—Is it to be very carefully guarded against?

Dr. Bogue.—Of course; one-fifty-second of a grain is a dose.

Dr. Ottolengui.—I have paid much attention to the obtunding of sensitive dentine, and I want to say something about dehydration, because that is the theory on which I have worked. In the very beginning of the evening, before the paper was read, one gentleman announced that the obtunding of sensitive dentine was easy; that it was only necessary to dry out the cavity. That is it exactly. Dry it out. If it can be dried out with a hot-air syringe, that is all that is necessary. But it does not always follow that the simple application of heat from a rubber bulb will be sufficient to dehydrate the cavity. Consequently it may be advisable to do as Dr. Dwinelle did, use chloride of zinc crystals, because that absorbs more moisture. Chloride of zinc, in a fluid form, has attracted to itself moisture from the atmosphere, and therefore cannot take as much moisture from the tooth-tissues as the crystals. I got as far as that. I found a patient who could not have a tooth filled, or even the old oxyphosphate taken out, the hot air not being sufficient to relieve the sensitiveness. Somebody, somewhere, whispered dehydration, and I at once saw that is the result obtained whether we use hot air, chloride, or zinc. Then I conceived the scheme of intensifying the dehydration, and began to use an ether spray. I kept a record of cases for nearly two years, tabulating two hundred and fifty of them, and obtained success in every case, but attended by objectionable features in many cases, showing that dehydration was all right, and the ether spray sometimes wrong.

I might say here, incidentally, that I thought at that time I was originating an idea, but somebody told me I was not, for he had seen it in the *Cosmos*. I looked over the *Cosmos*, and found that about twenty-two or twenty-three years ago a modest gentleman had suggested that it could be done in that way. I rarely use ether now except in extreme cases; but it does produce anesthesia—absolute anesthesia; not as the hot-air blast does, nor as does the chloride—*sometimes*—but every time. When I remembered that Dr. Curtis told me, two or three years ago, he had discovered the whole theory, I made up my mind this was the place to come to-night. If what he says is true, nitrous oxide is our friend. Dr. Rhein uses chloride of methyl. I do not think there is any particular property in chloride of methyl except the extreme cold, but the cold is intense and the obtunding is very rapid. The question has been asked to-night whether it is the nitrous oxide gas only that is effective, or whether it is the high pressure. On the other hand, I could not help thinking, when the doctor described that case, that he had a little more than local anesthesia; that relaxation of the muscles was caused by inhalation of the nitrous oxide. I have seen a gentleman produce anesthesia in a tooth by simply waving a napkin saturated with chloroform over the mouth. In the earliest stages of anesthesia, sensitiveness departs from the extremities.

I made, some two or three years ago, a long series of experiments with nitrous oxide gas, myself being the patient to note the stages of the anesthesia. I made the experiments in this way: I would have an assistant prick me with a needle while the drug was administered, and I found invariably that I was conscious of the fact that sensation had ceased; proving that the first effect of anesthesia is that sensation is controlled. It may be a little better to use nitrous oxide than hot air, because if any of the gas goes down the throat, so much the better; a little of it is very good; so if we are seeking for a powerful agent for dehydration, I have no doubt a most convenient agent is nitrous oxide, as suggested by Dr. Curtis.

Dr. Niles.—As a fact, a dehydrated nerve does not communicate sensation. This can be easily demonstrated by experiments on the frog. Those of us who have worked in the physiological laboratory know that frogs are used to demonstrate the reflex action of the spinal nerve. The medulla is severed, the nerve is dissected out of the frog's leg, and if the foot is irritated, the leg is quickly drawn

up. If the nerve becomes dry, there is no movement on the same irritation, but re-moisten with salt water, and the function returns. The only difficulty is in getting a cavity dry quickly enough so the patient shall not suffer pain during the operation. It is singular that I should be here with this apparatus, which produces insensibility in a manner exactly opposite by moist heat. It leaves one to suppose that heat alone is capable of producing insensibility of tooth-structure.

Dr. Ottolengui.—May I suggest that it operates on the same plan? Both methods produce heat, which seems to be the effective agent. The tooth, which is being operated on, is so hard no moisture is likely to get into the tooth-substance, and the heat that goes with the moisture will dehydrate the portion below the surface, tho the surface itself is wet.

A Voice.—Is it not cooked?

Dr. Niles.—No, it is not cooked, because sensation returns to that point, which could not happen if it were cooked.

Dr. Jarvie.—It seems to me there is a question behind all this we should take into consideration. Many means may be used which will obtund the sensitiveness of teeth, but is it well to employ them, in view of the after-results? I think when Dr. Curtis read the description of his throwing a blast of nitrous oxide into a cavity he gave us the best illustration why it should not have been done. He told us the sensitiveness was completely obtunded; that he exposed the pulp which bled, and that he went on with the operation, capt the pulp and filled the cavity. There is great danger of obtunding teeth to a too great extent. I think it is wise to let the pulp have its normal degree of sensibility left as a guide to tell us not to cut too near it. Painless work is all very nice while excavating, but that is of little real advantage if, as a result, the filling be made too near the pulp, and inflammation and suppuration ensue.

I do believe the plan suggested of drying the cavity with a hot-air syringe will obtund the sensitiveness sufficiently to enable the patient to bear the cutting, if sharp excavators are used. It is better for the patient to bear a little pain than to run the risk of exposing the pulp by wholly destroying, temporarily, sensation in the tooth. My experience is, a blast of cold air, such as the essayist recommends in a sensitive cavity, causes more pain than will be compensated for by the subsequent dryness.

Dr. Mills.—I make use every day in my practice of different potential acids. I use sulphuric acid, nitric acid, and muriatic acid for controlling sensitive dentine; and I am ready to demonstrate and prove their efficacy to any gentleman who may come and see me in my office at any time.

Dr. Dwinelle.—While I was on the floor, a moment ago, the query was made whether there was any considerable pain connected with the application of chloride of zinc. I admit there is at times, but not as much as one would suppose. By applying the salt, pure and simple, and allowing it to deliquesce (by absorption), it is far less painful than when used in a liquid solution. In extreme cases I have qualified it with great success by drying the cavity and introducing cocaine for a short time, and then applying the caustic. Then the patient never complains of pain. I sometimes use alcohol and other remedies, but chloride of zinc is my sheet-anchor, and I seldom have occasion for any other agent for obtunding sensitive dentine.

Perhaps I may have thrown a little ridicule on the instrument that has been presented to-night, and I wish to say I did not refer to that instrument especially. I do not say the use of this apparatus is not effective, but only that simple measures will generally accomplish the end supposed to be accomplished by this somewhat complicated machine. I am greatly obliged to Dr. Niles for bringing this instrument to our attention, and I believe it will do good. I do not wish to ridicule anything the result of honest effort to advance our profession in the right direction.

With reference to the remark of Dr. Ottolengui, that he supposed he had invented or discovered a certain method of practice that was highly efficacious, and subsequently found it had been used many years ago. I do not think that militates against the actual discovery by him. I believe in coincident discovery. It is perfectly well known that important discoveries have been made simultaneously throughout the world by different individuals at almost the same hour. New planets have been discovered by different astronomers, in different parts of this globe, on the same night. It seems to be a principle in nature that when the world is in the utmost need of a great discovery, when she is virtually in travail for it, so to speak, that out of the laboratory of Heaven, or the great mind of the Creator, the idea is vouchsafed to us, is sent down to us, and is received in various lands, and by different minds, at about the same time. So I am inclined to think the fact that a man's discovery has been used before him is no evidence it was not an original discovery on his part. It is possible, in the annals of eternity, it may be proven that every thot is but a reproduction of some thot produced and reproduced over and over in the history of the world of intelligence. It is not so very remarkable after all. It is with caution that we should undertake to say this man or that man has been guilty of plagiarism. History constantly repeats itself, and ideas are constantly repeated, so it is well for us to use charity. Good old Solomon said, thousands of years ago, "There is nothing new under the sun!"

Dr. Curtis's paper is an exceedingly interesting one. It is not so very important to me in my own practice, but it may be hereafter. It has opened a field of inquiry in a profitable direction, and I certainly thank Dr. Curtis for his presentation of this subject to us. It will elicit a great deal of earnest and honest inquiry, and I have no doubt will lead to the development of that for which we are aiming.

Dr. Brockway.—Obtunding sensitive dentine is not such an important one to us now as it was a few years ago. I am led to make this remark from the fact that in my own practice I have far less complaint from my patients in regard to painful operations than I used to have. I do not doubt the efficacy of the methods described and the agents that have been used; and I am struck more forcibly than ever with the fact that "there is nothing new under the sun," when I find that what I supposed I discovered some years ago, a method of obtunding sensitive dentine by dehydration, had been discovered by some one and published a few years before. And it has been discovered by Dr. Ottolengui now, and doubtless will be discovered by many others in the future. I wrote, and read before the Brooklyn Dental Society some twelve or fifteen years ago, a paper on this subject of obtunding sensitive dentine by dehydration. I was led to the discovery in this way: From using the rubber dam to cover several teeth in which cavities were to be prepared, I found that the cavities last prepared were usually quite insensible to pain. Those cavities were in teeth that had been kept dry for some time by the application of the dam; and, taking hint from that, I improved on it by using a jet of hot air from a syringe. I used this method quite extensively for some time, and occasionally use it now, but not as much as formerly, for I was led to suspect it might possibly be injurious to the tooth to keep it dry so long, or to dry it so thoroughly as I did; and then, too, I have changed my method of preparing cavities. Instead of cutting them out dry, or in a half-dried condition, as formerly, I almost invariably have a jet of water thrown on the bur while I am using it. I prepare cavities mostly with the engine, driven by a water motor, and using very sharp burs. No bur should be used unless it is *sharp*. With a jet of water thrown on the bur, to keep it from heating and to wash away the chips, I can prepare cavities much more rapidly than formerly, and without causing excessive pain. I have the impression that much of the pain, where the bur is used, comes from the incautious use of it, from the heat produced by friction.

Dr. Curtis here demonstrated successfully the use and advantage of his nitrous oxide blast by applying it to the teeth of a young man. The cavities were situated

in the proximating surfaces of the central and lateral incisors. The teeth were exceedingly sensitive, and gave unendurable pain when an attempt to excavate the cavities was made before the gas was used. The rubber dam was adjusted, and the blast gently applied for about two minutes, when the cavities were quickly and freely excavated, without the slightest expression of pain or discomfort to the patient. Five minutes later the teeth were as sensitive as before the application of the nitrous oxide. The cavities were filled with gutta-percha.

Dr. Ottolengui.—I know a number of gentlemen throughout the country are using my method of the ether spray, and I would like to say, after seeing Dr. Curtis' method of dehydration here, that I believe they will get better results with it than they do with the ether spray, tho I believe chloride of methyl is even better, if it can be obtained.

Dr. Dwinelle.—Mr. President, I presume I express the sentiments of every one present when I say that Dr. Curtis has certainly demonstrated all that he has claimed in reference to the new method of local anesthesia; and I move that a vote of thanks be extended to Dr. Curtis, not only for his very interesting paper, but for his successful demonstration.

Dr. Dwinelle's motion was carried.

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"The Secret of the Quack."

REGARDING the quack's "painless extraction," the ITEMS states that our "replies show how he does *not* do it." If so, we would be pleased to have the ITEMS give the true *rationale* of the case. I waited eagerly, but in vain, for the July number to give us some explanation. "Instead of denouncing it as a humbug," so far as the quack safely accomplishes what he promises, we must admit it is a good thing; but, so far as he does not do it he is "a humbug," and the same will apply to us all.

Now, cannot the ITEMS afford to give me a little space on this subject? I do not want controversy, but, with others, I want information, and in connection therewith, to give a few points that I know. I cannot think we "ought to be ashamed not to be able to control patients as well as these montebanks," so as to get their money by some jugglery, and not give an equivalent. If there is a wonderful secret of painless extraction, it ought not to be confined to men of dissipation and lack of integrity.

Since the montebanks left here, a few weeks ago, I've studied their work, and removed many roots and teeth which their would-be extractor ruined and could not remove, tho he did remove hundreds of teeth in this town. His method was as follows: He would dip his forcep into a dark, astringent liquid, that would coagulate on the gums, immediately force the beaks well down on the root, wait a second or two, and quickly pull. Patients say they felt the influence of the drug very rapidly approach the apex. It seems that mustard is something of an antidote, and he ordered it extensively, tho he didn't state for what. The patients for whom he failed, admit sore mouths, lame and painful jaws, or black-coated and benumbed tongues. One healthy tooth, in a healthy man, by mistake (?) he doctored and vainly tried to extract. I know the tooth to have been healthy because I examined his teeth critically a few days before. The adjoining tooth contained a very small crown cavity, and had never ached, and he was intending to have it filled soon. But the magnetic quack came, and the patient tho he'd throw away a tooth to save money, and "to see if it hurt." (He says "the pulling didn't hurt" him, tho he admits that it hurt his wife fearfully next day.) The quack failed on both these teeth, stating that they were "locked around the jaw!" Constant pain and lameness followed, and I could not cure it, so, after two weeks of suffering, he let me extract them. I dissected the sound tooth, finding a normal pulp. One nerve of

the molar was diseased by the drug passing down the peridental membrane, which in both teeth was badly diseased, of bright green color, offensive to the nose, and left a metallic taste in the victim's mouth. These sockets were very sore and painful for several days after extraction; the pain would not yield to ordinary treatment. This case is but a type of his failures, tho when he succeeded but little soreness followed, if statements were reliable. Now who will shed light on this?

By skilful feeling of the public pulse, and by adroit manipulation of his victims, the quack reaps a rich harvest, so long as he keeps in motion. But how long would he hold that patronage, in a town of average intelligence, against better educated operators, if he were to become a fixture like them? Peddlers on a cart in front of a dry goods store can get a bigger price for the same kind of goods than they within the store. People like novelty; and, according to Barnum, they "demand humbug."

Wiscasset, Me., July, '90.

W. E. GORHAM, M.D.

REMARKS.

That most of these "traveling dentists" are ignorant and unskilful, we will agree. That is not the question, but do not some extract teeth without pain? or with less pain than the average dentist "of the profession?" that is the question. And, if they do, how is it done?

As we were talking to a dentist in his office recently, a young lady came in to have a tooth extracted that had been filled by one of these unskilful traveling dentists. It was too inflamed to save, and was taken out. The nerve was slightly exposed, but so nicely covered with partially decayed dentine that a skilful dentist would have found no difficulty in saving the nerve and permanently filling the tooth. We do not think it had been cleaned out at all, or that any attempt had been made, when it was filled, to properly shape the cavity. When told it would have to be extracted, she said:

"But, Doctor, can you extract it without hurting me, as that dentist did in extracting two very bad teeth for me?"

"O, yes;" was the reply. And it was done.

Before this lady was out of the chair, two other ladies came in, and their first question to the first was, "Did it hurt?"

"Not a bit," was the reply. "He does it just as Doctor —— does."

"O, I am so glad," said one of them. "This lady with me had two extracted by him, and it was just fun. Now, then, Doctor, you may extract one for me."

Her tooth, also, was soon out, without pain, and they all left together.

After they had gone, the dentist said, showing me the bottle, "I would give fifty dollars to know what that obtundant is."

"Where did you get it?"

"I got it indirectly from this very 'Doctor' —— these women talked about. He was here for a time and made money; but he has no license, and so has to 'pass on,' after spending a few days or weeks in a place. I use it every day with the most wonderful success. I sent a sample to your daughter, who is practicing in Millville. I wish, when you return home, you would find out how she likes it."

On my return, I found a postal card saying, "I extracted thirteen teeth, painlessly, to-day, and as many as forty this week, using an obtundent Dr. F. sent me. It just acts like a charm. I charge the same as with gas."

Mechanical Dentistry of To-Day.

DR. WILLIAM H. STEELE.

SINCE the advent of gum sections and vulcanite, the standard of mechanical dentistry has gradually lowered; till to-day, in some localities, a good carpenter stands head and shoulders above the dentist in public estimation. I remember some years ago, in driving along the road, as I approached a large town I noticed painted on the fence in flaming colors, "*Teeth, \$5 a set, at Dr. ——'s dental rooms.*"

Pick up one of our leading city dailies, and read over the dental advertisements, and, when you have done so, you cannot blame the public for classing us with the carpenters, harness-makers, and other trades-people, for they have been educated to this idea by a class of men who, before the introduction of vulcanite and gum sections, could never have gained a foot-hold in the profession. I can remember, well, when I was a boy, the dentist of our village was looked on as quite an important personage. The prevalent idea among people at that time was that it took fine mechanical talent to make a dentist, and they respected him accordingly. In those days the public did not know how long it took to put up a plate, or what it

cost; but they did know it required skill. They approached the dentist with respect, and gladly paid him well for his work.

To-day they go into a dental office with the same feeling as they would into any other tradesman's shop. They think one set of teeth as good as another; that it only costs from one to two dollars to make a set; that it takes only a few hours to make a plate, and from one to six months to *learn the trade*.

We cannot blame the people for thinking thus, as they have been educated to this idea by the "carpenter branch" of the profession. I have talked with some who advocate dividing the profession, and turning the mechanical work over to this class of men. I do not believe in doing anything of the kind. Better educate the people to know what good work is, and make use of all new improvements and devices that will enable us to turn out fine work, than to not charge enough for it to pay to devote sufficient time to it. When patients come into your office and inquire the price for a set of teeth, if they think the price too high, and begin to talk five and ten-dollar work to you, do not get out of patience; but labor with them, explaining in a kindly manner the difference between a set of teeth that costs five dollars, and one that will cost from twenty-five to fifty dollars. I have followed this plan for several years, and have made many converts to good dental work, when they willingly pay the price for such work.

Blunders of Physicians.

HAMLIN BARNES, WELLSVILLE, OHIO.

EDITOR ITEMS :—In April **ITEMS** appears an article entitled *Ignorance of Physicians*, which furnishes a text for some of my experiences with the treatment of the patients of some of our most prominent physicians.

Case 1st. Young gent of eighteen, with large warty tumor on the chin, with fistulous opening, which constantly discharged pus. His physician lanced it a number of times and syringed it with medicine. Failing to cure it after eighteen months, he took him to a prominent surgeon of a neighboring city. They chloroformed him, removed the tumor with a knife, "scraped the bone," and discharged him "cured." This tumor was like Banquo's ghost, "it would not down." It returned to plague him again. A friend brought him to me. I diagnosed it alveolar abscess from an under right lateral, with about one-third of its cutting-edge broken off two years before with a bean-shooter. I wanted to treat it and crown it, but he had had all the treatment he wanted. It was extracted, and, of course, in a few weeks, the ghost was laid.

Case 2d. While visiting at an adjoining town, a young lady, with an ugly-looking abscess on her neck, called on the daughter of mine host. On inquiry, after she left, I found her physician had been treating her two years for scrofula. I expressed doubt about the correctness of his diagnosis, and said it looked more like the result of an abscessing tooth. My opinion of the trouble was made known to her after my departure, and she called on me a couple of weeks later. On examination, I found an impacted lower wisdom tooth, on removing which, my diagnosis was confirmed by finding a pus sac on the end of it. From a card received two months later, I learn the trouble has all disappeared.

Case 3d is a young man under treatment for quinsy. He was getting worse under the hands of his family physician, whose office was next door to mine. The latter called me in to see him. The muscles of the mouth were so tense he could not open it more than the eighth of an inch. I relaxed him with chloroform and extracted the offending impacted lower wisdom tooth,—this was the cause of his "quinsy"—and effected a speedy cure.

I could relate a number of similar cases that have come under my observation, where gentlemen of the medical profession have made as bad blunders as these.

What a Great Difference a Little Difference Makes.

DR. W. S. ELLIOTT AND DR. W. H. DWINELLE IN THE N. Y. DENTAL SOCIETY.

DR. ELLIOTT.—As regards the difference between the bone phosphates and the inert phosphates of the rocks, I do not know what the chemical difference is. I do not believe there is really any difference from this point of consideration—that all the lime of the earth, as naturalists understand it, has at one time been part of the living animal; that all the lime of the earth has really been in solution in the sea, and has been appropriated by animal life and then deposited in the rocks. Therefore it has been vitalized. Whether the lapse of ages has deprived it of that vitality or not, is a question I could not answer; but it is generally understood that all lime has once been vitalized by passing through a vital medium. I believe the element which the system really requires in the condition of pregnancy, is that of the hypophosphites. As far as the grain is concerned, there is a difference between the outer hull, or husk, and that layer which lies between the centre and the husk, and which contains more of the phosphites than the outer shell; and it is the phosphites of the kernel which is appropriated by the system, and not the phosphate.

Dr. Dwinelle.—In regard to the comparative potency of animal phosphates and phosphates derived from the rocks, we have a splendid illustration in medico-legal history, as derived from a great fact that was brought to light in England many years ago. I cannot recall the names to enforce what I am about to say. We will assume that there was once on a time a certain Jaynes' powder, that was very potent and efficacious in curing the malignant malarious fevers of the extreme East, where England had her armies by hundreds of thousands. Annually there broke out in that region occupied by the English troops this malignant fever, which devastated the army more than battles, unless they had a quantity of Jaynes' powder to combat it and allay its ravages. Jaynes' powder was a potent and effective remedy. Thus matters went on until, in the course of time, many generations, perhaps, the Jayneses became immensely rich; with riches came education, intelligence and refinement; and, in course of time, there was an appeal put by the country at large to have made known the components of this powder, which was a secret up to that time; there was an appeal to the generosity, intelligence and fairness of the manufacturers of this powder to make known the secret of its preparation. "Certainly, gentlemen," said they to the committee, "we have for a long period of time derived great advantage, wealth and power from it, and it is no more than reasonable that we should do as you request; we ought to have done it long ago; we have not the right to keep a process secret which belongs to humanity." So they published the recipe to the world; whereupon there were bids made immediately for supplying Jaynes' powder for the East. Among others, Jaynes was one of the bidders, but he was underbid by one Jones, and Jones got the contract. Jaynes came forward and said to Jones, "I congratulate you; all of my apparatus and plant, my factories, my stock, my experts, and my men are at your service." The offer was accepted, and Jones went to work to make the Jaynes powder, seeing great success and immense wealth before him. But his dream was soon ended. The fever broke out as usual, and the Jaynes-Jones powder was administered as before, but it had no effect, it was wholly inert, and the soldiers and others died like sheep with the rot. The result was alarming; the army was rapidly reduced, and the whole mother country was stirred to desperation by the terrible intelligence that came to them from the East. The subject was brought before Parliament, and an investigation was made. Jaynes came forward and rendered every assistance that he could in the premises, as did others. Jones was confounded. The old Jaynes experts were put on the witness-stand, and questioned closely in reference to any difference between the two recipes, and they declared them to be the same; each contained so much phosphate of lime, and so much of this, that, and the other. They were confounded, and the inquiry arose, what shall we do to be saved? The investigation went on day after

day. The old experts were put on the stand again and again; each time they declared that the materials used by Jones were precisely the same in nature and in quantity as those which had been used by Jaynes. Finally the counsel in the case said, "You say that Jaynes' powder contained so much phosphate of lime?" "Yes, sir." "And you say that Jones' powder contains precisely the same quantity of the same material?" "Yes, sir." "Where did Jaynes get his phosphate of lime?" "Why, from the bones of animals." "Where did Jones get his?" "He got his from the phosphate rocks; but they are precisely the same, chemically." The counsel sprang to his feet and cried, "Eureka! I have found it.

"In the beginning a nebulous sphere, containing all of the elements, millions of miles in diameter, transparent as ether, was floating in space. Suddenly, through the potency of electric force, this immense area was condensed into the circumference of a few thousand miles, and hurled into its prescribed orbit in the form of a ball of fire.

"From the elements, air and water took their appropriate place, upheavals forced elemental rocks above the surface, separating land from sea,—among them the phosphate rocks.

"It took the phosphate rock unnumbered millions of ages—passing through the alembic of nature's laboratory, through the stomach of myriads of animals, through an infinite and ever-advancing vegetation, devoured and digested by animals, through the cold-blooded range, ever evolving still higher and higher, through the varied types of the warm-blooded mammalia—before its primitive and inert condition had become so far *animalized* and *spiritualized* that it would be acceptable as a pap, a pabulum, to be assimilated with the human economy in the form of phosphates derived from the bones of animals.

"Phosphate of lime derived from the phosphate rock has no affinity with our animal economy; it is wholly inert, fatally inert, as proven by the unhappy experience of the Joneses in India, and established by this court of inquiry. The phosphate of lime obtained from the bones of the mammalia, through the mysterious processes of untold ages, readily assimilates with our elemental humanity, and is potent to save, as proven by the record of the honored Jayneses for generations past, all of which has been amply verified by this long and laborious investigation.

"The great lesson of this hour of our solemn victory bids us take heed that we recognize the fact that we live in an age where subtle, potent, and hitherto unknown elements and conditions challenge our recognition."

In the course of time Jones adopted the formula of Jaynes, and his powders were potent ever after.

At the time of the great fatality in India, some of the original Jaynes powder, that had been left over from the supply of the year before, was found, which, when administered to the sick, insured their recovery. This fact, at the time, gave additional perplexity to the problem, which in the end was so satisfactorily solved.

Sweetened Oatmeal.

THIS palatable and much-recommended article of food is, I am led to believe from personal observation, often the worst kind of an enemy to the teeth, for, insinuating itself under the free margin of the gum, it lies against the weakest part of the tooth, charged with its saccharine matter, sticky with gluten, there it lies reinforced, or replaced, day by day, till cavities appear under the gum, on the labial and buccal surfaces, and we wonder why they should be so attacked, when the teeth seem naturally strong in texture.

This is a homely subject, but I think needs our attention. Mothers are advised to feed this to their children to *strengthen* the teeth, while the effect is just opposite. I have asked people well along in years, with those grooves decayed under the gums, if they were not sweetened oatmeal eaters, and have generally been answered, "Yes, but how did you know it?"

C. B. PLATTENBURG.

Chicago, Ill.

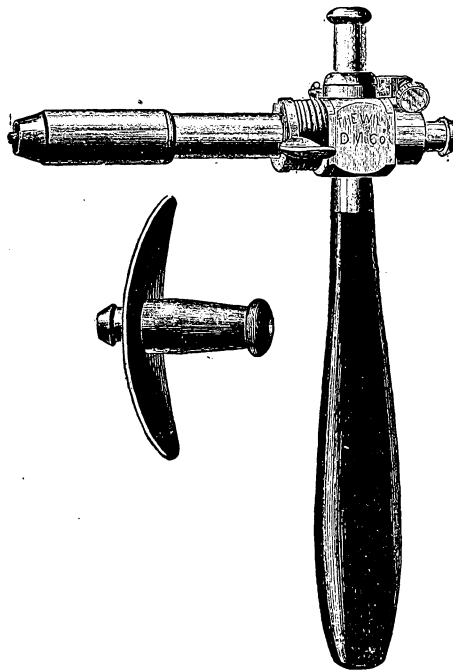
Irregularities in the Size of the Permanent Teeth.

BY comparing the teeth of the present generation with those found in skulls from one to three thousand years old, it will be observed that the size of teeth has altered very slightly. Teeth are generally regular in size; occasionally, however, may be seen excessively large crowns in the central incisors of the upper jaw, and in rare cases we find one incisor larger than the other. Such deformities are necessarily conspicuous. When the crowns are unnaturally large the roots are usually short and stunted, and centrals with large crowns are usually associated with small laterals. The laterals, however, are seldom larger than normal, but sometimes much smaller and often ill-shaped.

When the cuspids exceed the normal size they affect the expression of the face more than any of the other teeth, giving great prominence to the features and a resemblance to the carnivora. The bicuspid and molars are usually normal in size. The teeth more commonly fall below the average size than exceed it, which fact is particularly applicable to the lateral incisors and the wisdom teeth.

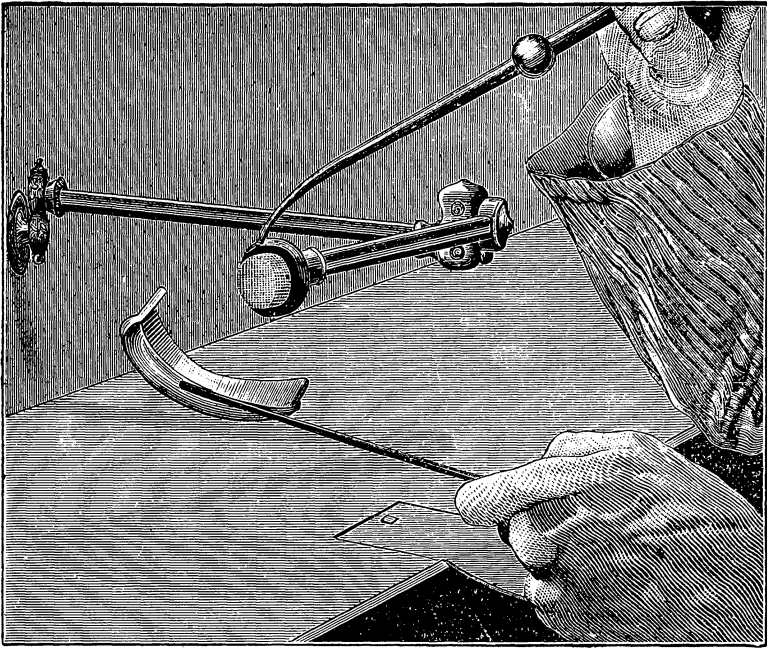
When the laterals are abnormally small, they assume a conical shape, the extremely small ones resembling the teeth of the cat. When, as is sometimes seen, the follicles of two teeth unite, the result presents the appearance of a single tooth, the roots of which are divided, and this is the only means of showing the preëxistence of two separate teeth.—*Dr. E. S. Talbot.*

Dr. L. M. Matthew's Little Giant Blow-Pipe.



THE proper gas-jet for soldering is a wire bulb, made by leaving the end of the gas-pipe with no burner and winding over it fine binding-wire, till a bulb about one inch in diameter is secured; the same results may be obtained by making a bulb of several thicknesses of fine wire-gauze over the end of the pipe, and bound tightly to it. The McIntosh Battery Company, Chicago, have recently, at my suggestion, made a wire gauze burner that can be screwed to the gas-pipe.

The object is to break the force of the gas, and add more oxygen to it; in this way, a flame like an alcohol lamp is secured, which can be easily controlled by the



USING BLOW-PIPE, AND SHOWING BURNER AND SOLDERING-PAN.

blow-pipe, and in heating up, the whole flame can be taken within its scope. The gas fixture should be horizontal, with two lengths, so as to place in the most convenient position while using.—*Haskell's Manual.*

Taking Impressions.

HORACE DEAN, JERSEY CITY.—In my judgment there is but one material known to us to-day which meets the requirements of a good material for impressions, and that is plaster of Paris. If of proper consistence and rightly manipulated, it will not displace the softest parts, but will truthfully take their impress. In the removal it does not bend out of shape, nor draw into straight lines, as the wax compounds will always do to a variable extent; but as it cannot bend, it breaks with a sharp, clean fracture, which leaves exact edges to be rejoined. For these reasons I always use plaster of Paris for all kinds of impressions.

In describing my process we will begin with a partial upper case. The first step is to get a wax impression with the teeth as nearly correct as may be. In this, cast a plaster model, using salt or potash to hasten the setting, and separating as soon as set, for the heat generated by the quick setting will have so softened the wax as to make the separation easy. In this model, place a sheet of wax, and have it cover all portions corresponding with the parts of the mouth of which you wish a copy. Let the wax cover the palatine surfaces of the plaster teeth, but not the grinding-surfaces. In the spaces between the teeth let the wax be quite thick. On this wax plate place a piece of ordinary wire mosquito netting, which carefully adapt so that it covers and touches the wax and the grinding-surfaces of the teeth. Next, in the usual way, coat with separating fluid (I use glycerin) the parts of the model not covered with the wax, and place a coat of plaster over the wax and net, being sure that it covers the grinding-surfaces of the teeth and a narrow space at the back of

the wax plate. When this is hardened, separate and remove the wax, and you will have a shell plaster stiffened and held firmly by the wire net. This shell closely approximates the shape of the mouth, and will carry the plaster of your impression to just the part you wish to copy and nowhere else. When you are ready to take the impression, try the shell in the mouth and trim till it goes easily in place and rests firmly on the ends of the teeth. Then soak it in water to make it more comfortable to the mucous membrane, and also that the impression-plaster may stick to it. Next, fill the shell with plaster mixt in the usual way, and place in the mouth, pressing up till it rests on the ends of the teeth. You will find that the plaster, while flowing easily and accurately to all parts inside the arch, will not be on the outside of the teeth, and consequently it will be quite easy to remove the impression by pressing down on the two sides of the shell.

For a full upper case you take an impression in wax, being careful to have the wax press as high as possible on the gum. By at once casting a model and hastening its setting, you can retain your patient till the model can be compared with the mouth. Mark on the model the places where the edges of the shell can rest firmly. Then construct the shell in the same way as for partial cases, letting it go as high as possible on the gum. In taking the impression you simply press up till the shell rests firmly on the parts intended, and the plaster flows inside the shell and is not disturbed by any tremor or movement of the hand of the operator. In removing the impression it will be necessary to lift and draw the side of the mouth, to admit air between the impression and the roof of the mouth, when it will easily drop.

Partial lower impressions have always been of great trouble, especially where there is much undercut, or where the teeth lean in a good deal, or both together. It is only within a day or two that I have been able to think out an adaptation of this system to such cases, and it is still largely a theory. I will give my ideas so that we can all work at it and, perhaps, obtain something that will be of benefit.

In such a case, after getting a model of the lower jaw from a wax impression, I should trim to as close a proximation of the mouth as possible, and then prepare the shell in the same way as for a partial upper, excepting that I should leave a portion of the wire net just back of the front teeth uncovered by plaster for a space of perhaps a quarter of an inch in width, and extending from the cutting-edges of the teeth down to the floor of the mouth. This forms a hinge, which will allow the free ends of the shell to be pressed toward the tongue, and so make it easy to carry the plaster down over the crowns of projecting teeth. When down to its place, press the sides of the shell laterally against the teeth and hold till the plaster is set. Of course, by this time the plaster of the impression covering the hinge has also set, and made that portion rigid. If now you can easily remove the shell and its contents, do so. If not, again press inwardly the free ends of the shell till the plaster over the hinge is broken and the sides are clear of the teeth, then remove, and, by pressing the shell outwardly till the fractured edges are touching, the impression is restored to its truthful position.

The wire netting has a valued place in my laboratory. I use it in making trial-plates, putting it between two thin sheets of wax, which it makes very stiff. In mending or in making slender plaster work, a piece imbedded is a great strengthener, and even if the plaster breaks the parts do not part. There are two grades, fine and coarse, for different conditions.—*First Dis. Den. So., in Cosmos.*

My Way of Taking Impressions, for a full upper case, is this: Selecting my impression-cup of the right size, I take it into the laboratory and drill a hole through the floor of it, and then put a rim of wax all around the cup, making a ridge in the back, so the plaster shall be retained and not forced down into the throat. The rim of wax I build inside of the impression cup holds the plaster in contact with the buccal and labial surfaces, and prevents it rolling off. On the floor of the impression-cup, where the opening has been made, I put a little sheet wax, and of it I build a reservoir, where the patient has a small mouth and a very deep arch; after I

have put the impression-cup in place, I manipulate with the fingers underneath that wax reservoir and force the plaster up, and it gives a very accurate impression. I hold it there about four minutes. I have found where otherwise the suction would be insufficient it has proved by this method good. In partial sets, where there are overhanging teeth, it is difficult to get a plaster impression. I take my impression-cup, melt a little wax all over the inside of it, on which I place other softened wax, and heat it so it sticks to the impression-cup; then take as accurate an impression as the wax will give. That is cooled in water, and the wax removed wherever I want the plaster to go through a hole or channel. Then I make of soft wax a reservoir; I try it in. Then I fill in the plaster, having the reservoir full, and having none where the remaining teeth fit in, and take my impression, which is beautiful and sharp, almost always perfect, without breaking.—*Dr. Reece, in Cosmos.*

Dr. A. G. Bennett, says:—As we all know, the dovetail *inter-dentals* spaces are the points of greatest difficulty. I have lately struck a method by which the most difficult partial impressions are greatly simplified. I had a very bad case, requiring the two laterals and a bicuspid, all the palatal surfaces being very bulging. I tried several of the usual methods, and failed. The question then occurred to me, Why not obliterate these spaces *by the teeth required*? So I first selected the teeth and ground them up, and, after drying the adjoining surfaces, I waxt them in place with hard wax. I easily took the impression, afterward removing and placing the teeth in their positions. As you will see, this method requires no articulating out of the mouth, simply putting the wax plate in position and flasking the case. This week I took an impression of a very difficult case for the two laterals, the other teeth being much denuded at the necks. I ground up the teeth, and simply sprung them into place, no wax being needed, and then very easily took a perfect impression. The advantages of this method are obvious. Besides dispensing with articulating and trying in, you can see exactly how the teeth are as to size, shape, and shade, and they cannot move out of place, being securely fixt by the impression. I would not recommend this method for universal adoption; it is chiefly for difficult cases; and in such I have found not only nothing better, but nothing half so good. It is especially applicable where there are small spaces. Where there are spaces articulating three or four teeth, it is not so good. I have used it with gum teeth and plain teeth, but it is better for the latter. I set them as firmly against the gum as possible. They can be removed afterward, trimmed a little, and set up still higher by having them a trifle long at first.

Taking an Impression for an Artificial Palate.—During the last fifty years the men who have constructed appliances for defective palates have spent much time in telling how you must take an impression, and that it must be accurate or you cannot perfectly adapt the appliance. I also wish to state that during the last ten or twelve years I have constructed a great many obturators, or so-called artificial palates, without taking an impression of the fissure of the soft palate. I merely take an impression in plaster of Paris of the hard palate, the same as you would for artificial teeth, and then make a plate with an extension of gold projecting into and above the fissure. I then model around this extension a preparation of wax and paraffine till I have constructed my obturator and have obtained its length, width, and thickness. The soft palate being movable, I found it impossible to take an accurate impression of the fissure and adjacent parts suitable for the construction of an obturator out of hard rubber or metal, so I have finally abandoned all efforts to take impressions of congenital and acquired lesions of the soft palate. I merely mention this to show that if you have a case of that kind requiring an obturator there is no necessity of wasting your time in trying to take an impression of the fissure and needlessly torturing your patient, for an obturator can be constructed by modeling in wax around an extension plate, which will cause little irritation during the modeling or in the wearing of the appliance.—*Dr. Gibson.*

“What Next?”

A. DENT, D.D.S., NEW YORK.

THE career of many dental students is finished at the college. They have smashed about everything they could lay their hands on, they have torn up the matting, broken panes of glass, pounded their fellow-students, and behaved themselves in the coarsest manner describable. They have hooted at the professors, and made fools of themselves generally with cigars, beer, and dime museums, and during the lecture hours have done everything but pay attention or allow any one else to, and as a reward for their inattention have at last taken the degree of D. D. S. After the excitement has subsided the self-inquiry is, “What next?”

It might be remarked that the school-room is a little world of its own, and as a scholar acts there, so is he apt to conduct himself in the great world without. The same senseless blundering in the work he does there will be characteristic of his life-work. He has his diploma, and his last dollar has gone for an evening dress-suit, while his landlady, with whom he has confidential pledges, will wait for her board-bill till he gets into practice. The college now is dull as a church-yard, and about as interesting to him. The question before him is, “What next?”

During his college life he cherished the thought that his father, brother, uncle or aunt would let him have money to open an office. They now think differently, and conclude to wait till he has had a little more experience. They advise him to get into an office with a dentist of good practice, then they will see about it. He walks about the city from office to office. The first few days he is willing to work for \$35 or \$40 a week as a starter, and when he finds out that about two hundred gentlemen, qualified like himself, are, or have been, on the same mission, offering to work for any price, almost on any terms, he realizes one thing,—that the diploma cost about \$1,000, and that it is not the easiest thing in the world to get his \$1,000 back. His desperation and necessities put his professional brethren in a bad plight. He may be a good dentist, but he has hardly earned his first dollar, and he has little practical knowledge of the real worth of a filling or a set of teeth. His general principle is to take what he can get. The student of medicine has a little better prospect; for he knows that it means \$2 a visit when he makes a call, and in special cases, \$20 to \$25, and a dollar for an office fee. But the raw recruit from the dental college! Who will pay him for his advice? His work is accepted at first with great misgiving, and tho it be well and creditably done, he must, or he will, for some years, throw in his practice twice what he gets paid for, to secure patronage. He finally thinks he sees a short road to wealth—advertise; that's the idea. A great head! He does not know that advertising is an art, and to do it well is equal to anything he can do. Happy thought! A show-case, handbills, posters, and sets of teeth made while you wait! No charge for repairs; advice free; teeth extracted for twenty-five cents; sets of teeth \$5 up; teeth filled with gold for a dollar; amalgam, twenty-five cents. The advertiser also inserts that he is a D. D. S. After a few years of this wretched life, finding he cannot profitably give advice free, or extract or fill teeth, and repair, at his advertised prices, he drops the job. The landlord, the tailor, the shoemaker, and the unpaid dental depot bills tell the story,—he has made a fool of himself. But the egotism of D. D. S. never reaches that tranquility of mind by which he admits anything of the kind. Practice is not good, but one thing is left—the female. Yes, he will marry! He acts on the impulse, and marries a fool of a girl, whose parents have some means, or at least a front room for his office, a bedroom for himself and wife, and free board for a year or so, and once more he imagines he is on the road to wealth. He might even then succeed, were it not for his silly habits,—whisky, beer, cigars, cigarettes, horses, poker, the baseball and the ticker, brag and laziness, and unwarranted liberties with female patients. This is not a fancy picture; the woods are full of them, and the sprigs are growing. Education is a good thing, but good morals and industry are indispensable.

The fact is, medical and dental degrees are too indiscriminately conferred. The

New York Dental College has young men within its walls who have matriculated at the age of sixteen, passed the curriculum at eighteen or nineteen, and are now waiting to arrive at twenty-one years to obtain their D. D. S., because under the New York law they cannot practice for themselves till that age.

No dental student should be permitted to matriculate till he is twenty-one years of age, and should have an experience of one year or more in practical dentistry, and be recommended by a dentist to the dean of the college.

The degrees of a dental college should not be conferred on poor young men. Their poverty brings the profession discredit. Suppose the dean asks the young man who applies for admission, "What are your prospects when you get through?" "Have you money enough to establish yourself in practice and live as a professional man should live?" "Are you able to take the position of a professional man after you have taken your degree?" If he says, No; that he is poor, had to borrow the money with which to go to college, owes for his board, etc., he ought to be rejected. This seems hard, but there are moral grounds for it. The profession should come from a privileged class of persons, whose poverty does not compel them to sell themselves and their neighbors for a mess of pottage.

The fees for a dental education should be increased. For the N. Y. C. D. to properly instruct two hundred and forty-seven students within its walls, the facilities should be at least twice what they are at present. This instruction nets the college, for the two years, including matriculation, dissecting ticket and diploma, examination, and the fees paid for a summer course, about \$62,000, and the income from the infirmary at least \$25,000 more. How much better it would be to raise the fee per capita to \$200 per term, to a select set of men of one hundred, and give them a full, complete course of dental instruction. The student who has paid his \$300 feels in his own heart that justice has not been done to him. The college has not the capacity to do any more. The rooms are overcrowded; ventilation bad; the personal discomfort experienced by one student is communicated to another, so that there is almost a continuous uproar. The time it would take a competent instructor to fit a student for the necessities of the profession is so great that \$300 per man would not pay him. As will be seen, the college instruction is cheap to the student,—\$300 or less; (\$255, with Dr. Stein's Quiz, \$25 extra). The student requires two years' looking after to fit him for practice; and, if turned out a good dentist, he ought to make, if properly settled and located, from \$3,000 to \$5,000 a year. It will be seen at once that it is a small investment for a large income, if he gets there. The education is cheap, the instruction cheap; and as the student is rattled off with his parchment, his room being wanted, is it any wonder he feels cheap when he is through? On commencement night much is said about a liberal education, and what a professional man should be. It takes money to attain that ideal, and that which is the same thing as money—time. The poor student, or post-graduate, is satisfied in most cases, as things are now, with bread and butter. The saying that the professional man only gets meat when he is too old to chew it, grows out of the fact that he was poor when he went to college, poor in college, and poorer when he got through. Professional men need capital to maintain appearances and self-respect; if they fail to have it, the result is failure.—*Dental Advertiser*.

Acid Phosphate.—Dr. Head, before the Odontological Society of Pennsylvania, said: I have been noticing for a year or two past that something has been making fearful ravages in the teeth of my patients. I found that on every occasion of this my patient was an ardent lover of "acid phosphate." I felt that there must be some connection between this drug and the trouble with the teeth, so I determined to investigate the matter. To do this I got a supply from a druggist and dropt a tooth into it, and found that in thirty minutes it had formed a thin film on the outside of the tooth and the whole enamel was softened. In two days the enamel was as soft as the other part of the tooth, and the whole tooth could be crumbled away.

Cleft Palate.

DR. H. O. MARCY, BOSTON.

OPERATIVE measures for the relief and cure of cleft palate generally fail on account of non-closure of the wound, especially at its free or distal extremity, dependent on infection and the difficulty of retaining the parts at rest. During the last few years the attempt at repair is less often made by the surgeon than formerly, doubtless in large measure due to the extremely ingenious and useful mechanical devices in the way of artificial plates, one of the distinctive triumphs of American mechanical dentistry.

I confess myself to having given over the field as one entirely unfruitful of surgical relief till within the last year, when I carried into effect, in a single case, the method which forms the subject of this brief contribution.

Miss J., aged twenty-five, a strong and healthy woman, had a congenital cleft of the soft palate, with only a slight indentation of the bony structures. Each half of the uvula was well developed, and by moderate tension the edges of the cleft could be brought into apposition. After a careful explanation of the intended procedure, the patient cheerfully consented to the operation. Aided by Dr. Charles Bullock and Dr. S. L. Nelson, I commenced the operation by the introduction of a tracheotomy tube. With careful washing and irrigation the nasal and oral passages were rendered aseptic by the use of a sublimate solution of strength $\frac{1}{1000}$.

After the introduction of the mouth-gag and packing the pharynx with an aseptic sponge, the soft palate was seized on each side, the edges slightly freshened by scissors, and split laterally to the depth of about one-third of an inch. The posterior flaps thus formed were carefully joined by a very fine "over and over" tendon suture. A somewhat larger suture, commencing at the angle of the base of the division of the flap, was carried laterally from side to side through the center of the soft palate, a little beyond the line of lateral division. This line of suture extended quite to the uvula. The approximation of the sides necessarily everted the edges and by so much increased the fresh surfaces brought in contact, while it completely buried the line of sutures. The everting edges presenting in the roof of the mouth were then carefully joined by a very fine continuous-tendon suture. Two double-looped stitches taken as far away from the central line as possible were then introduced, to prevent any lateral strain on the central wound. The mouth and nose were closed, and only rarely required to be cleansed of mucus during four subsequent days; after cleansing they were dusted with iodoform by means of the iodoform-blower.

Respiration went on comfortably through the tracheal tube. A large injection of weak beef tea, given once in six hours, served the purpose of food and drink.

The wound remained non-infected, and repair ensued as in aseptic wounds in other parts of the body, with the exception of the tip of the uvula, where a small slough formed from over-constriction of the suture.

The above case is reported as an experimental study, and is at least instructive as giving possibilities of better surgical results than those generally obtained in this distressing deformity. Whether such seemingly heroic procedure as antecedent tracheotomy may meet the approval of the profession is a question for discussion. Without it, all attempts at rigid antiseptic conditions of the part are seemingly futile. External wounds of the body are readily sealed from bacterial infection by the simple application of iodoform collodion, but thus far all attempts have failed in protecting mucus surfaces by germ-proof dressings, and we are under the necessity of making the cavity itself aseptic, and maintaining it in this condition till repair can ensue, or accepting the danger of infection, which, when respiration is allowed to go on in the usual manner, generally gives failure.

The advantages of the use of the tendon suture in this operation appear to be equal to those claimed for it in operative wounds in other parts of the body, and, if this is true, it is the only suture material to be recommended for this operation.

If it shall happen to me to attempt again the repair of these parts, a modification of instruments would simplify in a considerable degree the operation. Forceps bent at a suitable angle, the blades protected by rubber tubing, to prevent injury of the inclosed parts, will greatly facilitate the seizure and holding of the flap preparatory to splitting it. The division also can be effected easier by a knife, the blade of which is at a suitable angle to the handle.

The needle forceps also need special adaptation of the curve for the easy introduction of the sutures. Any practical surgeon, however, can effectually operate with the instruments ordinarily at his disposal.—*Am. Med. Ass., in Cosmos.*

Dental Law of New York.

APPROVED by the Governor May 31, 1889. Passed, three-fifths being present. The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Chapter five hundred and forty of the laws of one thousand eight hundred and seventy-nine, entitled, "An act to regulate the practice of dentistry in the State of New York," as amended by chapter two hundred and eighty of the laws of one thousand eight hundred and eighty-eight, is hereby amended so as to read as follows:

SEC. 1. No person shall practice dentistry, or assist in the practice of dentistry, either as agent or employé, in the State of New York who shall not have received the proper diploma from the State Dental Society, or from the faculty of a dental or medical college recognized and approved by said society, as providing a proper and sufficient medical or dental education and maintaining a proper standard thereof, and no person shall practice dentistry in this State who shall not have attained the full age of twenty-one years and registered in the office of the clerk of the proper county, as provided in section three of this act; provided, however, that any person who, after attaining the age of twenty-one years, practiced dentistry in this State for ten consecutive years prior to the twentieth day of June, one thousand eight hundred and seventy-nine, may, within three months from the passage of this act, upon making affidavit to that effect before the clerk of the county in which he shall engage in such practice, register and practice as a dentist without having received a diploma from the State Dental Society, as required in other cases. Provided, further, that nothing in this act contained shall prevent a student who is pursuing a regular course of instruction from assisting a person duly qualified to practice dentistry and registered as herein provided.

SEC. 2. Any person who shall practice dentistry in this State without the authority prescribed by section one, and without having duly registered as required by section three of this act, shall be deemed guilty of a misdemeanor, and shall be punished on conviction of a first offense by a fine of not less than fifty dollars, and on conviction of a second offense by a fine of not less than a hundred dollars. All such fines shall be paid into the treasury of the county wherein they shall be imposed and applied to the benefit of the common schools of that county.

SEC. 3. No person shall practice dentistry in this State who shall not have attained the full age of twenty-one years. Every person practicing dentistry within this State who shall not have made, prior to the passage of this act, such registration as was required of dentists by the laws in force prior to this enactment, and at the date of such registration shall register in the office of the clerk of the county where his place of business is located, and in the office of the clerk of any county into which he shall remove or in which he shall carry on his business, in a book to be prepared and kept by the clerk for that purpose, his name, age, office, and post-office address, legal authority for practicing dentistry in this State, and the date of such registration, which he shall be entitled to make only upon presenting to the county clerk a certificate from the members of the State Board of Censors appointed by the State Dental Society for the judicial district in which said county is situated, to the

effect that said applicant for registration has received a proper diploma as provided in section one of this act, and upon the making, by said applicant, of an affidavit stating his name, age, and legal authority to practice dentistry within this State. Every person admitted to registration under the provisions of this act shall be entitled, upon the payment of a fee of fifty cents, to receive from the county clerk a certified transcript of his registration. All affidavits made in pursuance of the provision of this section shall be preserved in a bound volume by the county clerk in whose office they are made, and all affidavits made pursuant to the provisions of section one of this act shall be filed in such office, and if any affidavit made pursuant to the provisions of this act be false in any material regard, the affiant shall be deemed guilty of perjury and punishable therefor as prescribed by the penal code. It is further provided that any registration procured by fraud or false statement of any kind shall be deemed null and void, and the person procuring the same shall be guilty of a misdemeanor, and punishable on conviction by a fine of not less than fifty dollars, or by imprisonment, or by both fine and imprisonment.

SEC. 4. This act shall constitute the only penal statute regulating the practice of dentistry in this State, and all acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 5. This act shall take effect immediately.

Repairing a Partially Broken Down Gold Filling.

AT a meeting of the Pennsylvania Association of Dental Surgeons, held April 8, 1890, Dr. W. H. Trueman stated that a few weeks ago Dr. I. Wilson Moore, of Philadelphia, gave him a valuable suggestion. He said that several years ago he was called on to add a small portion to a large contour filling in the upper central incisor, to replace the corner of the tooth that had been broken off some years after the filling had been inserted. The position of the required addition was such that he had either to rely on the new and the old gold uniting firmly, or to remove nearly all of the old filling, which was large and in excellent order. In addition to the labor involved, there would have been considerable risk to the remaining portion of the tooth in its removal. He applied the rubber-dam, and after carefully cleansing, with absolute alcohol and chloroform, the portion of the filling to be operated on, and thoroughly drying with bibulous paper and the hot-air syringe, he repeatedly failed to make the new gold adhere, tho the surface was well roughened and such retaining-pits made as the case permitted. Presuming that this failure to unite was due to the presence of moisture, he resorted to the following expedient: He formed at the end of a fine probe a minute ball of cotton, about the size of a large pin head, dipt this into alcohol and ignited it, allowing it to burn till the alcohol was partly exhausted, so as to have the flame more under control, and then held it immediately under the prepared surface of the filling, allowing it to remain till the patient gave sign of discomfort. This was repeated several times. He found that he was able to make the filling quite hot without inflicting more than bearable pain. He then proceeded to back on it the new gold, and found that it united quickly and firmly, and the operation was completed without the slightest difficulty. In finishing the filling he severely tested the union, and found it stood the test thoroughly, and, when finished, the joining of the new and the old gold could not be distinguished. He had recently examined that operation, after two or three years' service: the two portions of the filling seemed to be as thoroughly one as tho all the gold had been inserted at the same time. He had since repeatedly adopted the same expedient in similar cases, and always with success. He thot by these means not only was the surface of the gold thoroughly dried and cleansed, but it seemed to him the little burs and fibres of gold raised by the roughening of the surface and, perhaps, also, the surface of the filling, were annealed, and the union of the new and the old gold thus facilitated.

Variableness in the Number of the Permanent Teeth.

DR. E. S. TALBOT, IN HIS "IRREGULARITIES."

THE normal number of permanent teeth is thirty-two, but from various causes the full complement is not always reached, and, on the other hand, it is sometimes exceeded. We cannot agree with Tomes and Salter, who claim that when an irregularity in number exists it is more likely to exceed than fall below this number.

When there are more than the normal number, the superfluous teeth are called supernumerary. They may resemble the natural teeth, or may be round and conical, with short root, or the crown flattened and the cutting edge serrated. Supernumerary teeth, which are similar to any of the natural teeth, generally resemble the incisors or molars. We have never seen a second canine or a third bicuspid on only one side of the jaw. Mr. Salter has observed two canines in one individual, and one example of a supernumerary bicuspid.

When the central or lateral has a supernumerary of a similar form by its side, it is usually difficult to distinguish the normal from the supernumerary, the latter being nearly perfect in form. The lateral incisor is more commonly duplicated than the central. Third molars are sometimes accompanied by a supernumerary, when there will be four molars on one side. When the temporary teeth remain in connection with the permanent, they are not classed as supernumerary teeth.

The conical and serrated supernumerary teeth are usually found associated with the incisors or the wisdom teeth. When found in connection with the incisors, they are either situated between the central incisors or in the palatine surface posterior to the incisors. When joined with the wisdom teeth they are usually on the buccal surface, but occasionally on the palatine surface, and sometimes posterior. Such teeth are the result of an extra-epithelial cord and dental follicle. Absence of permanent teeth is common, and cases are recorded in which permanent teeth never erupt. Linderer reports the case of a woman aged fifty years who never had a permanent tooth. Mr. Tomes relates similar instances, but he has never met a case in which the permanent teeth were all wanting. Cases are on record in which one central incisor was missing, but these are of rare occurrence. Commonly, we find one or both laterals missing, also one or both of the cuspids. They may be imbedded in the jaw, or their follicles may never have existed. If they are in the jaw a tumor will generally locate their position, and may be outlined by the finger.

The wisdom teeth do not appear at all in many mouths, while in others, some of them only are erupted. Prof. Winchell, in his lecture on "The Degeneracy of Man," states that the early races were invariably supplied with four wisdom teeth, and concludes that, since they do not always appear, and are so prone to disintegration, that this is a strong link in his chain of proof of the degeneracy of man. Other late writers show strong evidence that the wisdom teeth are more perfect and common in existing than in early races.

Dr. J. E. Van Marter, in his study of prehistoric dentistry among the skulls of Umbrian and Etruscan races, which existed 500 B. C., says: "Some teeth were exceedingly fine in form and preservation, tho we find many instances of only twenty-eight in number, with no trace or sign of there ever having been thirty-two. In other skulls I noted the same want of the third molars. Evidently, they were never developed. It is worthy of note that in the comparatively few remains of prehistoric skulls in the above collection, there should be such a proportion of those in which the third molar does not appear. In about one-fourth the third molars were wanting. What, then, becomes of the theory that the wisdom teeth are becoming rudimentary and disappearing? Perhaps they disappeared once before, and reappeared again in an age of wisdom, but are now fading away, marking a decadence in that dental evidence of sage understanding, to again reappear in man's perfection."

Chloralamid.

W. V. WHITMORE, A.M., M.D.,

Interne Los Angeles County Hospital.

ABOUT four months ago we received from Messrs. Lehn & Fink, of New York City, a sample package of this new remedy. From the numerous favorable reports of the drug, which we have seen in the medical journals, we judged it to be a valuable addition to our list of hypnotics. We, therefore, decided to give it a careful and thorough trial. We submit some of the results of our experiments. Before doing this, however, we will briefly notice some of the properties of chloralamid.

It was discovered by Dr. J. von Mering, and is the addition product of chloral anhydrid and formamid. It occurs in colorless crystals, and has a mild, slightly bitter taste. It is soluble in one and a half parts alcohol. Water may then be added to the solution without precipitation. As to its solubility in water there is some confusion. Most writers state, and, in fact, the statement appears on some of the packages, that it is soluble in nine parts water. But on the most of the packages (that we have seen) it is claimed to be soluble in nineteen parts water. We have proved the latter to be true, and we have never been able to dissolve it in any less proportion of water at ordinary temperature—70° F. It is more readily soluble in warm water, but is decomposed by heat above 148° F. Probably the best mode of solution is to put the crystals in warm water with a few drops of alcohol.

The dose varies from fifteen grains to a dram, but thirty grains is about the amount required for the majority of cases. It may be given with advantage in acidulated solutions, but alkalis decompose both aqueous and alcoholic solutions.

The hypnotic effects of chloralamid are noticed in from fifteen minutes to three hours. Probably an hour is not far from the average time.

The sleep is usually peaceful, sound and uninterrupted, from five to eight hours.

The most important advantage of chloralamid is that it has no depressing effect on the heart, and may, therefore, be used with perfect safety in all organic cardiac affections.

Arterial tension is not diminished. It is said that the formamid, resulting from the decomposition of the drug in the blood, stimulates the vaso-motor centers in the medulla, and thus prevents a lowering of blood-pressure, and, in some cases, prevents an actual elevation of it.

Another important consideration is that it does not derange the stomach. The most delicate, even those with weak stomachs and deranged state of digestion, need fear no ill effects from chloralamid. It has no effect on temperature and respiration.

We have given over two hundred single doses of this hypnotic to fifty-two persons, representing twenty different diseases, with good effect. We will give the results of our experiments in those diseases in which we have given it the most thorough trial.

Cardiac Lesions.—We have administered it in cases of both mitral and aortic regurgitation. The dose was thirty grains. In the former case the patient had been getting from two to five hours sleep (by the use of morphine and chloral), but the five nights that he received chloralamid he slept from five to seven hours, and his breathing was much easier than it had formerly been. In the later case the patient slept nearly all night. These cases verify the statement already made that it causes no cardiac depression.

Uterine Carcinoma.—This patient was not sleeping any without some hypnotic, and she slept only a few hours when opium or morphine was administered. With chloralamid she usually slept seven or eight hours—once only four to five hours.

Asthma.—Cardiac asthma with severe dyspnea—dose thirty and forty grains. This patient had a pulse of 130-150, was quite edematous and with paroxysms of dyspnea, in which he required the assistance of the nurse to get on his feet, to prevent suffocation. With chloralamid he sleeps all night, never less than six hours.

But even more gratifying has been the effects on his asthma. From the first administration the dyspnea has been much relieved. For days he now has no severe asthmatic attacks. He always refers to chloralamid as his "asthma medicine," and frequently asks for it. It surely comes the nearest to being a *specific* for cardiac asthma of anything we have used.

We then gave thirty grains to case of bronchial asthma, and each time he slept six to seven hours. His dyspnea was very much relieved—the improved respiration continuing several days.

Acute Mania.—This patient was entirely sleepless without some hypnotic. She had been taking chloral (gr. xx-xxx) and bromide (gr. xxx), or sulphonal (gr. xxx-xl). We administered thirty or forty grains chloralamid eighteen times. Twice she slept very little, six times she got from four to six hours' sleep, and the remaining ten times she slept all night. We have frequently alternated with sulphonal—equal doses. At first chloralamid seemed to have the better effect, but later the results of the two were just about equal.

Acute Alcoholism.—We have given it to seven cases. The dose has usually been thirty grains—once twenty and a few times forty. Three of the cases slept all night, two slept nearly all night, and the others, three or four hours. We are of the opinion that, in this disease, to obtain uniformly good results forty grains should be given. We have not failed to secure a good night's sleep since we have given this amount.

Melancholia.—We have administered eleven doses, thirty grains each. One night she didn't sleep very much, six nights she slept four to six hours, and four times six to eight hours. She said she had not slept any for three months.

Neuralgia.—We have used it fourteen nights in a case of visceral neuralgia, often accompanied by severe emesis. The dose was usually thirty grains, a few times it reached forty. It has proved very efficient, producing sleep even when there was quite severe pain. Once, when the pain was intense, he slept very little. In the majority of cases he slept six or seven hours, several times sleeping all night. The other times he slept five or six hours. At various times we have given equal doses of sulphonal, but the results have been less satisfactory. At no time, in this case, have we seen any tendency towards gastric disturbance.

Several times, on account of the emesis, we have been obliged to give an enema, and we found it most efficacious administered in this manner. We gave fifty and sixty grains. In one of his most distressing attacks, an enema of sixty grains was given. In twelve minutes he was sleeping quietly and he continued thus to do for eight or nine hours. In the other instances he slept five to six and a half hours.

Rheumatism.—Several patients with this disease have taken it. In each case the dose was thirty grains. One with the syphilitic variety had the best sleep he had for weeks. In the chronic articular form the patient slept all night, half of the next day, and all the following night. In this case the drug exhibited its analgesic action, for he was suffering quite a good deal of pain.

Surgical Operations.—We have used it in cases of insomnia from operations for hydrocele, castration for sarcoma, and in tenotomy for talipes equino-varus. Good results were obtained in all of these; especially was this true in the last case. The patient—eleven years old—was extremely nervous for some time after the operation, pulse 125-150. He was in intense pain much of the time. Twenty and thirty grains chloralamid produced rather more satisfactory results than did the deodorized fluid extract of opium m. viii-xv.)

Postero-lateral Sclerosis.—Patient was also a morphine habitué. Twenty-two doses were given, varying from twenty to thirty grains. Half the nights she slept six to eight hours, and nearly all the remaining nights she slept four to six hours. These results are fully as good as those obtained from sulphonal. She could not retain chloral on her stomach.

Pyo- and Hydro-salpinx.—One case of each disease has been treated. Twenty and thirty grains were administered in the former case, and the results were all that could reasonably be expected; she slept all night each time it was given her. In the latter case thirty grains was the dose. The first time she took it she did not sleep very much, as she was in very much pain; but, after the tumor had been aspirated, it gave her a good night's rest on several occasions.

Phthisis.—We have obtained our most satisfactory results in these cases (if it be possible to have any better results than those in cardiac asthma). We have given fifty doses to nine different patients. The dose was twenty to forty grains, usually thirty. The first case in which we administered it required an hypnotic, on account of thoracic pain. Opium disagreed with him. We gave him chloralamid twenty-four times, with excellent results. Almost invariably he has slept from seven to eight hours—never less than six. He soon came to know the medicine, and was unwilling to take any other hypnotic. In the other cases it has almost always given a good night's sleep. Dyspnoea has been at once relieved. Under its influence pleuritic pain has also been stopped, and the breathing wonderfully improved. In one case the cough was one of the most annoying features, both to the patient himself and to the others in the ward. When he took chloralamid he slept all night, with very little or no coughing, and this happy relief would continue far into the following day. In other cases, more advanced, under the analgesic effect, the cough has been "loosened," and the patients have been able to expectorate most profusely, sometimes three or four times the usual amount. In such cases they would experience great relief for some time afterward.

Early in our administration of chloralamid we observed its antihydrotic effect. Night sweats seemed to be checked in every instance. We then gave it to the worst cases of hyperdrosis that we had—cases in which the night sweats had been most profuse and exhausting, almost every night, for three and six months. We had used belladonna, atropia and aromatic sulphuric acid with no avail. With one or two exceptions these sweats have been entirely checked by chloralamid. One of these phthisical patients—the only one in two hundred administrations—complained of some cerebral disturbance and slight nausea the morning after taking chloralamid.

We have also observed good results in cases of hysteria, monomania, typhoid fever and morphine habit.

In a case of lepto-meningitis thirty grains did not produce any sleep—the only negative result we have had.

We have noticed but three instances of delayed action, and the same number of cases in which the hypnotic effect was continued into the next day, a result which so frequently occurs with the administration of sulphonal. By far the majority of the patients say they feel unusually well the following morning.

From our own experience with the drug we would say that it has the following advantages over chloral :

1. It is more agreeable to the taste, and, consequently, much more easily administered.

2. It very rarely causes digestive disturbances (one per cent of the cases).

3. It does not depress heart or circulation.

4. It very seldom produces cerebral disturbances (one per cent of the cases).

Compared with sulphonal :—

1. It is much more soluble.

2. It is more rapid in its action.

3. Sleep, almost invariably, passes away by morning.

4. It is only one-half as expensive.

The reports and statements of the night nurses, as well as the testimony of the patients themselves, confirm our own observations, viz., that the patients sleep better from the administration of chloralamid than they do with any other hypnotic that we have used.—*Southern Cal. Practitioner*.

Laboratory Hints.

DR. WILLIAM H. STEELE, FOREST CITY, IOWA.

TAKING UPPER IMPRESSIONS.

IN difficult cases, where the arch is very high, etc., use a cup with a hole cut in the palatine part, large enough to admit your finger. Place over the hole a piece of thin muslin; fill the cup with plaster, or Teague's Compound, mixt to the consistency of thick cream, place the cup in the mouth as usual, now with your forefinger press the plaster up against the arch in all directions. By this means you can, in all cases, get a clean, smooth, and perfect impression.

MAKING FINE FILES.

It is sometimes found convenient in doing crown and bridge work to have very fine files of odd shapes, to dress up difficult places. I got my idea from an old jeweler's work, and it will be found useful. Dress up a piece of wood file shape, a half inch wide, and glue to this a piece of emery paper, the grade of grain you wish your file. Next, shape your file as you wish it, of the best cast steel, and, before tempering it, pass your emery paper across several times, diagonally. Temper by heating to a cherry red, and plunging into linseed oil.

AIR-CHAMBERS.

I do not believe in the universal use of the air-chamber. But where one is necessary make it as follows: When the patients come for their teeth examine the mouth carefully, and decide where a vacuum will do the most good; and, with a pencil, outline on the plate the shape of the chamber; then, with the engine and a No. 8 round bur, follow around the outline, and pit as deep as desired; making the pits one-eighth to one-sixteenth of an inch apart. Now complete the work by going over and pitting the whole enclosed surface.

CONES AND WHEELS FOR POLISHING.

Nice cones and wheels for the laboratory, which are much more durable and satisfactory than either felt or cork, can be made by any dentist. Turn out of good dry cotton wood the sizes and shapes you want. Then cut from good, heavy cham-
 ois-skin pieces of right size and shape to cover the cones and wheels you have ready; shave down the ends of the strips thin; now coat the side going next to the wood with this cement: Glue, five parts; rosin, four parts; red ochre, two parts; mixt with the smallest possible quantity of water. When mounted, lay in a cool, dry place till the cement is thoroughly set. If the instructions are followed, they can be used for carrying any polishing material wet with water.

SELECTING TEETH.

A dentist who has mechanical talent, but lacks artistic skill, is like the person who learns to play the piano, but has no ear for music. The work done may be mechanically perfect, but is sure to be deficient in expression. Much more natural work (better adaptation and articulation) can be done with plain teeth than with gum sections. Always select teeth exactly suited to the case on hand. Do not try to make something else do, as it always makes extra work setting them, and will be unsatisfactory when done. If you cannot afford to keep a large stock of teeth on hand, you should keep a good line of samples, and order the teeth for each case. Make a study of the human face, and select teeth adapted to the features and temperament of your patient. In a protruding lower jaw, it is a good plan to use the ordinary plain teeth above and "crescent" teeth below, and the reverse for protruding upper jaw.

MENDING BROKEN PLATES.

I have not patched a badly fractured or broken plate for some time, but reproduce the plate as follows: Bring the parts together as for mending, oil the palatine portion of the plate, and pour on plaster. After thoroughly hard separate the plate

from the cast, being careful not to injure the cast while doing so. Now, with file, or lathe bur, remove the rubber rim above and back of the teeth, so that the teeth can be easily drawn from the cast without danger of fracturing, which can be determined by trying. Next, place the parts on the cast in their correct position, wax up as the original plate was, and flask as for a new case. When hard, open up and remove the wax; reclose the flask again and fasten firmly with bolts or clamps. Heat by dry heat in a cast-iron porringer, or, what is better, a dry air celluloid machine, till the rubber is soft; open up the flask, grasp the old plate by the heel with a pair of pliers, and remove carefully; pack and vulcanize as new work. I can as readily get five dollars for this work as I could two or three for patching, and it is much more satisfactory to both dentist and patient.

Acquired Irregularities.

DR. E. S. TALBOT, IN HIS "IRREGULARITIES."

UNDER the general head of etiology of acquired irregularities may be mentioned thumb, lip, finger and tongue sucking, and long-continued nipple and sugar-teat sucking. Some common forms of irregularities are ascribed by different writers to thumb-sucking, which, in the author's opinion, cannot be classed under that head of causes. Indeed, we think that irregularities in the permanent teeth are rarely the result of thumb-sucking. It is a habit acquired in infancy and continued while the first teeth are in the jaw, when the roots are small and short and very impressible. The upper teeth are easily pushed out and the lower pressed in by any constant force. Thumb-sucking tends to enlarge the arch, and, by throwing out the surfaces of the upper teeth, will make spaces between them, at the same time making proper occlusion of the teeth an impossibility.

If the habit be not overcome when the second set appears, the upper incisors will be pushed out, making a fan-shaped arch, and the pressure of the object will produce absorption of the processes, or the alveolar process will assume the shape of the object sucked.

In the lower jaw the irregularities are reversed: while the upper teeth are thrown out, elongated and spread apart, the lower incisors are forced inward, shortened, and crowded together. Pressure on the lower jaw in thumb-sucking has a tendency to shorten the angle of the jaw; absorption and deposition of the bone take place, so that the lower teeth generally articulate one tooth back of the normal position.

Dr. Ballard, of London, observed that the prominence of the central incisors and the vaulted arch were common with idiots, and concluded that thumb-sucking was the cause of this prominence, and, consequently, of the idiocy. While it is a fact that this peculiar deformity is more frequently found among idiots than in healthy persons, it cannot be a result of thumb-sucking, for the following reasons: First, if the irregularity were produced by thumb-sucking, the deformity would exist on one side of the median line, according to the hand which was used, rather than at the median line, where most of these irregularities are located; secondly, the vaulted arch could not be produced by thumb-sucking, as the thumb could not reach the roof of the mouth to produce sufficient pressure to affect the arch. The vaulted arch and the V-shaped jaw are not always associated, the V-shaped jaw being as frequently unaccompanied by the vaulted arch as it is found with it.

It is agreed that the thumb-sucking during first dentition changes permanently the shape of the jaws; but before the maxillary bones could be affected the teeth would be thrown out of position, and, as has been remarked before, irregularities of the first set of teeth are seldom seen. Sucking of the tongue and sugar-teats is more likely to produce deformities of the bicuspid, molars and hard palate than of the anterior teeth, owing to the position of the tongue. Deformities occur at the point where the pressure is the greatest. Therefore, relieving the pressure decreases the deformity.

Filling with a Matrix.

BY the use of Dr. Jack's and other matrices, very many of the difficult operations in contour filling have become, under the skillful hand, very skilful operations; and operations once requiring hours for their completion are now accomplished in minutes.

The impossibility of having the walls of a cavity in full view, and the inconvenience of easily adjusting a matrix, led me to discard all forms of matrices, and look about for a method of quickly reaching the same or a better result. After some years of experimenting with methods, foils and preparations of cavities, I am pleased to present you a method which you will find to answer the requirements of the case, thereby making operations, formerly long and difficult, so short that they become a pleasure both to the patient and the operator.

First, space by a separator or tape, to the width of a No. 3 or 4 separating file. Apply the dam in the usual or following manner: In the case of a right upper, second bicuspid, lay the dam over the face, and apply it to the mouth in the position it is to occupy; then, with a pencil, mark the center of each tooth from the right superior lateral to and over the first molar. Punch out a hole for each tooth, and then apply the dam, beginning at the lateral and working backward. Over the molar slip a clamp, or, if close to the second molar, slip a ligature up between, and leave it. Then, with a thin and flat burnisher, turn the dam up on itself around each tooth, and dry with cotton.

The dam applied in this manner obviates the tying of a ligature about each tooth, which is a nerve-trying experience.

This method allows greater freedom for working, because the dam is out of the way, and also affords better light. It will be found to answer the purpose for large cervical cavities when properly applied.

Next, prepare the cavity as usual, except do not cut any retaining points, but in their place cut a fine groove across the cervical wall and down the buccal and palatal or lingual walls with a fine bur, and make the opening on the crown surface, when possible, slightly dove-tailing toward the body of the tooth; then, with a sand-paper disk, smooth the mesial surface, as the case may be.

The gold to be used becomes the next feature, and must be a soft gold, easily molded under a burnisher.

In using soft foil, take No. 4 soft, cut in one-half sheets, and roll to about the size of three-sixteenths of an inch in diameter, and flatten. Each cylinder to be of a length slightly exceeding the depth of the cavity from front to back, and its size in the square to depend on the width of the cavity and the method of condensation.

In preparing the cylinders, take a strip full length of soft gold, grasp it with a pair of pliers, and fold over and over till the size wanted is rolled; then condense easily endways, then sideways, and repeat till it is of the desired square.

Never cut a strip in two lengthways to get a short cylinder, but rather fold it on itself lengthways, and proceed to roll as in the usual manner. With many of these cylinders of various sizes rolled during leisure hours, or by the assistant, considerable time may be saved at a moment of the greatest strain to yourself and patient.

Now place a floor of these squared cylinders across the bottom of the cavity, allowing the ends to extend slightly over the edge, and, with a large, round or foot-shaped plugger partially condense this layer, then, with a couple of pieces of No. 4 foil, made cohesive and *single thickness*, placed over the partially condensed surface, the whole is thoroughly condensed with a smaller, rounder plug, care being taken not to allow the plugger to enter the gold extending over the edge.

When thoroughly condensed, pass a thin, flat burnisher up by the ends, and, with a slight pressure, force them over the edges of the cavity in each direction, making the burnishing carry the gold over the edges, thereby locking it and preventing tearing it out. Increase the pressure on the burnisher till the ends are well condensed, and shaped to the desired contour.

When this point is reached, place two thin layers of cohesive gold over the whole, and condense well. This is done for the purpose of locking each layer and giving edge-strength to the contour. Burnish this edge well, and then proceed with your second layer of soft cylinders, as you have done with your first, with the exception that the middle cylinders are to be slightly longer than the side ones to allow for the swell of the contour. Burnish, and proceed as before.

The crown surface can be finished by building up the desired shape with cohesive gold, which can always be made to unite with the soft gold, if the first union is made with pieces of single thickness, well united by mechanical force, and condensed with soft gold.

Contour fillings, built in this manner, do not need any finishing with a file or sand-paper, as the whole surface is left finished at each stage, and any amount of overlapping gold is burnished off, leaving a clean, smooth edge, and highly polished.

By this method the entire wall edge is constantly in view, and one point is not left for another till the former has been completely filled and finished, which alone is enough to commend this method to our careful consideration.—*Waitt, International Dental Journal.*

Two Little Things.

DR. E. PARMLY BROWN.

I WOULD like to mention two little things which I think are of interest. Our profession is made up of little things. Lately I found the problem of obtunding sensitive dentine was still an open question. I found, also, that the question of thermal changes and the shocks which are sent into the living pulp—into the life of the tooth after metallic fillings are inserted—has been something of an annoyance and distress in some cases; and we have heard of fillings causing the death of pulps which we had tried to save. We are called on nowadays to build up portions of teeth with gold—for instance, in making contour operations and knuckling operations on bicuspid, which is skilful work—and the bicuspid are the teeth which the great mass of our profession have failed to save. I have experimented for years with oxyphosphate and oxychloride fillings; I have made hundreds of experiments which I have not mentioned. Lately I have been making some experiments in incorporating a very fine-grained asbestos in oxyphosphate fillings in the proportion of about one-third of asbestos to two-thirds of phosphate. Oxychloride I have abandoned as being too much of an escharotic to place near tooth-pulps. Even the oxyphosphate, which does not irritate, permits thermal changes and shocks, lasting, perhaps, a week or a month in some cases. I am incorporating asbestos, which we will assume to be a better non-conductor than the oxyphosphate itself. I have done that in some desperate cases in which I expected serious trouble from the solid gold operations near the pulp, and yet in not a single instance have the patients complained of any thermal changes. I have had success with it as a nerve-capper. A non-conducting filling is what we want. It occurred to me that perhaps a diametrically opposite method from that which was pursued thirty years ago might be successful. We then used fine ground quartz, or silix in oxychloride fillings, thinking it would prevent wear; but we found when a piece of silix would get loose it would plow its way across the filling and assist in breaking it down instead of preventing it from wearing away. Asbestos is exactly the opposite of silix; instead of fragments of glass, it is silken thread; it will allow the masticating motion of the teeth without abrasion and prevent wearing. I am now experimenting, and will report the results later, in regard to the wearing qualities of asbestos in oxyphosphate fillings. I have been using asbestos in this way for a year or two, but only in the last year have I made a practice of it so as to feel able to report on it. The process of setting is somewhat hastened by the incorporation of asbestos, which is due, I think, to its absorbing some of the moisture.

Another interesting feature is suggested by Dr. Palmer, of New Jersey. He is

making some porcelain bridges for anchoring on roots, and finds difficulty in taken an impression of the end of the roots. You all know that when the root is dressed down in crown-setting the gum is apt to come over the end of it. In putting the wooden peg in the canal for the purpose of getting its direction, it occurred to Dr. Palmer to pack gutta-percha around it, forming an exact impression around the pin and end of the root; and when he took the impression the pegs and gutta-percha came out as part of it. Whether that is new or not I do not know.—*1st. Dist. So. of N. Y., in Cosmos.*

Taking Impressions.

DR. L. P. HASKELL, IN HIS MANUAL.

THE success of the artificial denture depends on a correct impression as the foundation for the work, therefore care should be taken to insure success. As to materials, I differ with many instructors. Some good impressions can be taken in wax, more in the modeling compound, but most in plaster. It may be accepted as an axiom that the more difficult the case to obtain an impression of, the greater need of plaster.

For a *Full Upper*, spread a large napkin over the dress; select a cup as near the size of the jaw as possible; as it is necessary to obtain a high impression over the cuspids, place a little wax over the outside of the cup at those points, also over the posterior corners, if the tuberosity is deep, and raise the palatal surface at the rear a little if the arch is deep.

Mix the plaster to the consistency of thick cream, and add a pinch of salt, at the last moment, after the plaster is ready, as you do not want to hasten the setting till after placing in the mouth; stand at the right side, and with the left hand distending the lips, press the rear of the cup into place, and so, forcing any excess forward; press the cup into place, at the same time, telling the patient to "keep the tongue quiet, and not to be concerned about what runs over at the rear;" then press the lip so as to force the plaster well up under it. If there is nausea, tell the patient to resist the tendency, as it will be over in a few moments. As soon as the plaster has set, which can be ascertained by breaking off a piece of the surplus in front, remove by raising the lip high, and working the impression so as to let in the air.

For a *Full Lower*, proceed as above, only standing in front of the patient, and as the cup is passed into place, press the cheeks away from the cup, so there shall not be a fold of membrane underneath.

For a *Partial Lower*, with the anterior teeth remaining, select a cup with an opening for the teeth, and through which they will pass easily. Wet a piece of paper and lay over the opening, and, holding the cup in the palm of the hand, put in the plaster, and place in the mouth, always pressing away the plaster from the front before inserting, so as to have as little outside of the teeth as possible, as it will facilitate its removal. If there are molars remaining, so that the sides of the cup will not go deep enough, place wax on the outer edges. Sometimes the teeth stand in such a position that the plaster must, of necessity, break; this is of little importance, as the pieces will readily go together again.

For a *Partial Upper*, proceed as with a full upper, only, before inserting, press away the plaster from the sides of the cup where there are teeth, as there will be enough to go outside. Do not let the plaster set as hard as in full cases, or the cup will leave the impression, and the plaster have to be broken away in pieces. This can always be avoided, and should be, as this separation and after work of removing the plaster in pieces is very unpleasant for the patient.

Never take an impression in wax, and then plaster in it; for while the plaster will break just the same, it will often be difficult to replace, or even save in pieces, when they are thin; there is nothing to be gained by it. Be sure your impression is good before dismissing the patient. It is a simple process, only avoid using an excess of plaster, and too large a cup.

A Pertinent Thot.

E. P. SHEPARD, 'SAN FRANCISCO, CAL.

THE article appearing under the above head, in the July issue of your ITEMS OF INTEREST, starts out by stating a very patent truth, viz.: "The dentist does not occupy a place in the estimation of the people, that is his by right of the importance of his services."

While I am sorry to acknowledge the truth of this, allow me to point out what seems two reasons why we are so regarded by the public.

1st. We underrate our own skill, and lower our professional dignity by advertising cheap work. There is so much of this done in San Francisco, that many of the people think we keep plate work on hand by the bushel, and for seven dollars per set, they can step in and select a set for themselves, and that they will not be detained longer than the time it may take to remove what few remaining teeth they may have. This will, to many, and especially to our Eastern brothers, seem over drawn and absurd, but allow me to state the following to substantiate it:

A patient for whom I had extracted his few remaining teeth, the other day, was surprised when he learned I could not give him a plate immediately. He said he would not have had his teeth drawn had he known beforehand I could not give him the artificial teeth to take away then. These erroneous ideas are caused by the many advertisements of cheap denture, to be seen in every issue of our daily papers.

2d. I hear complaints of the apparent haste in which many dentists do their operative dentistry, as if they could not afford time to do their work carefully.

Undoubtedly, with too many of our dentists the getting of the *coin* is their sole object, judging from the advertisements. Many are obliged to thus hurry the work of each, as they advertised their work done for a mere song, and if they did not hurry (and thus slight both patient and work) they could not make expenses at their advertised rates. Thus, they lose their place in the estimation of the people.

Aluminum as a Dental Base Metal.

MR. JAMES WALLACE, of Glasgow, writes:—In *Dental Record*, Eng., I read the discussion on "Aluminum as a Dental Base," by Mr. Macleod and others, with considerable interest. I may state what was the reason which led me to use aluminum, and subsequently to take out a patent for it. (I do not want to argue at present, however, who used the metal first, as that can be ascertained, as a fact, by a reference to dates).

About thirty years ago, when I was a student at the Andersonian University, Glasgow, under Dr. Penny, Professor of Chemistry, he gave a lecture on aluminum, and said it might do for dental purposes if a solder could be found for it. After the lecture we had a conversation. When I suggested that it might be used in combination with vulcanite the Professor became quite enthusiastic over it, and requested me to make an upper set of teeth for him with the metal (he was wearing a gold plate at the time that was unsatisfactory).

After the new denture was made he wore it constantly for two years, and the metal was as pure and perfect as when it left the polishing brush. I then took out a patent for it. The Professor wore the aluminum till his lamented death; his wife wore one for thirteen years, and within the last month I made a new case of teeth for a patient who was still wearing an upper denture in aluminum that I made for her twenty-six years ago. No metal can be compared to it for dental purposes if it is always made pure, but, when I used it, it was shamefully manufactured, and irregular in character. Not frequently, when the plate was being struck up, it would go into reeds and show the unprepared clay. This was my principal reason for giving up the use of aluminum, for such impure material would get corroded in about five years.—*Dental Record*, Eng.

Money vs. Brains.

EDITOR ITEMS:—Will you allow one of the poor class a little space in your journal to lift a voice against an article in the *Dental Advertiser* for July, entitled, "What Next?" by A. Dent, D.D.S., New York. [See p. 402 of this ITEMS.—ED. ITEMS.]

The Doctor states a few things we cannot accept. A man who has been so much more fortunate than the majority entering the profession as to have been "born with a silver spoon in his mouth," lowers himself by trying to exalt himself to the exclusion from the profession of the poor.

Money is a convenience, but it does not make brains, skill the hand, endow with judgment, or make the man. Gold does not put knowledge into the fool's head, place the artistic touch at the fingers' tips, improve hot temper, or make a Garfield of some poor, ignorant piece of humanity because he has cash. Money may make a politician, but not a man of wisdom and skill.

The Doctor says "the applicant should be asked by the Dean of the Dental College: What are your prospects when you get through? Have you money enough to establish yourself in practice and live as a professional man should live? Are you able to take the position of a professional man after you have taken your degree? If he says, no; that he is poor, had to borrow the money with which to come to college, etc., he ought to be rejected." Is that kind, charitable, just toward the best young men knocking at the door of the dental college? God have mercy on the man that thinks money will buy him character, intellect, skilled hands and good judgment. Money may help and may hinder, but there is a bright possibility without it, if there is pluck, thoughtfulness, and perseverance. The best scholars and most successful men in our profession have been students without means, but possessing that which money cannot buy, *brains, grit, and brawn*.

Girard, Pa.

GEO. F. WOODBURY.

Manual Training.

WHEN I was eight years of age, I was whittling out little water-wheels and running them in a little stream that passed by our house. About that time I read in some book, published in Boston, something about how a clock was made; it gave the principles, and I got some little round wooden wheel, on which ribbons come, and cut the notches out and made a clock with the same knife that my mother was afraid I would cut my fingers with. I did cut my fingers, but I was learning the use of my fingers; and I have kept at it; I have not left it off to this day. I believe now, that any dentist who ignores the laboratory as not being high-toned enough for him, is ignoring the place of all others that would give him the best opportunity to keep in good practice and to acquire the highest point of skill in any branch of dentistry that he may be following. Some years ago a friend of mine wanted to make a dentist of his son, and asked me to take him as a private student. I said I would when the time came, provided he was trained for it. I said, in addition to his foundation-work in the academy, let him undertake something that will be in the line of manual training, simultaneous with his other studies; let him play the violin, the jews-harp, or the piano, take lessons in drawing, or a trade, something by which he will acquire skill with his fingers. That was carried out for two or three years, till it was proven that the boy had no interest in the use of his fingers; it was work, it was drudgery; so the proposition to become a dentist was dropt. I do not think he could have been trained to become a really skilled dentist. He would have made as good a dentist as the majority of dentists who have had no special finger-training, who go to college and spend their time smoking in the laboratory and seeing others operate, and then hang out their signs. I tell all young men who come to me for advice, if they have not already acquired some manipulative ability with their fingers,—I do not care whether it is modeling or what it is, only so they have finger-skill,—that if they have not acquired that skill, and it is too late, to acquire it, they might better study law.—*Dr. N. W. Kingsley.*

Another Explanation.

FROM "THE PRACTICAL DENTIST."

THE Wilmington Dental Manufacturing Company, since securing the corporate franchise of the American Dental Manufacturing Company, are developing signs of manly independence. It appears that the consolidation of the business interests of these two important houses evoked considerable unfair criticism, and, in self-defense, the Wilmingtons have published a card, in which the following significant language is used:

"We appreciate the generally prevailing sentiment against the system of trusts and monopolies so universally prevalent with the dental profession and the community generally.

"That centralization and monopoly are antagonistic to the best interests of a free people, we admit without argument. Our house has been one of the staunchest advocates and champions of liberal and legitimate competitive trade relations, as the true principle of business, and always in the best interest of the consumer. And we would have it emphatically understood that in the consolidation of the two important interests represented by the American Dental Manufacturing Company, and The Wilmington Dental Manufacturing Company, we have in no way violated the principles above enumerated."

We would like to know what our friends the S. S. White Company think of these emphatic declarations. It looks as if the boss house in the combine will be obliged to have curb bits in stock soon.

We learn, since the above was in type, that the Wilmingtons, in obedience to the will of the trade combine, expressed formally and emphatically at its late meeting, have withdrawn the advertisement of Dr. Munson, publisher of the *Practical Dentist*, from the ITEMS, a dental journal owned by this house. The rejected advertisement called attention of the profession to a line of dental goods manufactured by Dr. Munson and sold at prices greatly reduced from those asked for the same class of goods by the combine dealers. The withdrawal of this advertisement and the announcement of the Wilmingtons as above do not seem to harmonize. Another explanation is in order.

[Friend Munson is sometimes a little too suspicious, sensitive and previous. Does he not find his advertisement in the ITEMS since the date of the above meeting? —ED. ITEMS.]

Painless Operations.—The crying need of the hour in dentistry is *anesthesia* for *sensitive dentine*. All the progress of medicine may truly be said to depend on the discovery of anesthesia. Surgery depends entirely on it in its greater aspect, and through its aid thousands of lives have been saved which would otherwise have been sacrificed.

Similarly with us. It is a world-wide cry against the dentists that they torture their patients. Those of strong physique submit and endure the agony entailed in dental operations. With a second class this is simply an impossibility, and thousands of teeth are neglected and lost from this cause, even tho the patients may be able to pay for our most skilled services. Then there is a third class of patients: those who after months of torture in anticipation finally come into our hands, and with nerves strung to a hurtful point pass through the ordeal and have their teeth saved, but at what a cost! We do not sufficiently consider the consequences of shock in the dental chair. Yet undoubtedly many suffer for months and even years from injuries to the nervous system received whilst in our hands.

The greatest duty of our profession to-day is to discover and adopt a mode of painlessly performing our operations. This discovery has been announced so often that you have reason to doubt each new method that is offered. But for all that, you owe it to yourselves, to your profession, and to your patients, to investigate everything, and to adopt whatever is beneficial.—*Br. Jour. of Den. Science.*

Our Question Box.

With Replies from some of our Best Authorities on Dentistry.

Address all questions for this department to DR. E. N. FRANCIS, UVALDE, TEXAS.

Question 5. A. What is the quickest and best way to cut off a tooth preparatory to crowning with porcelain?

B. What is the best preparation for bleaching teeth?

REPLIES.

A. Use jeweler's fine saw, draw temper on either end, turn up and insert rings for handles. J. B. GATES.

Warsaw, N. Y.

A. I use first on the labial and lingual sides the thinnest corundum disk made; then, if necessary, use spear-shape drills; then a stump corundum wheel.

Waco, Texas.

W. R. CLIFTON.

A. I use Dr. A. L. Northrop's corundum points, from five to nine, and burs Nos. 11, 22, and 66. (S. S. W.).

B. Chloride of alumina placed in the cavity, and moistened with peroxide of hydrogen.

Wellsville, N. Y.

F. H. ELLSWORTH.

A. If pulp is dead, cut tooth partially off with small corundum wheels in engine; then clip with cutting forceps, after which shape roots with reamers and facers, as suggested by Dr. R. Ottolengui.

Paola, Kas.

DR. E. L. FLOYD.

A. Drill four or five holes near the gum, from labial to palatal surfaces, with diamond-shaped drills, and cut out thin wall between holes with fissure burs; pry off now with chisel, dress down root with stump corundum wheel.

Carthage, Texas.

W. L. LAWRENCE.

A. Brown's granite disk, from one to four, with the aid of Kalver saw and frame, is the shortest method of cutting a tooth preparatory for crowing. Bur drills, of suitable size, owing to ease in hand, for reaming the root canal.

B. Peroxide of hydrogen.

Henderson, Texas.

R. L. HAYES.

A. I first use small wheel burs around neck of tooth, and then cut off with excising forceps; finish with corundum wheel—safety sides preferred.

B. Chlorinated lime mixt with tartaric acid—equal parts, dry—kept in a glass-stoppered bottle, ready for use.

Monticello, N. Y.

R. W. ALLAN.

A. Cut on either side of crown with corundum disc, and break with forceps; grind down with $\frac{1}{8}$ -inch corundum wheels, trimming edge with disc.

B. If too much discolored to be remedied by thoroughly removing dentine, drying with hot air and filling with oxyphosphate, I cut off and crown.

Tremont, N. Y.

W. E. ANDREWS.

A. Cut through enamel of lingual and labial surfaces with a new, knife-edge corundum disc, say No. 7; clip off tooth with excising forceps; cut stump down with round file, finishing with barrel corundum point, No. 4. Can do all within twelve minutes, with absolute safety from fracture.

Pittsburg, Texas.

W. G. JONES.

A. I cut off two superior canines with living pulp yesterday. Notched cervical portion with thin corundum, then used round burs, size of pin-head, till near the nerve; then snapt off with excising forceps, opening nerve cavity with cone burs, after applying cocaine with carbolic acid and oil of cloves; knocked out the pulps, without pain, with orange wood.

B. To restore good color to dark teeth, I usually cut away the inner discolored

part, and put oxyphosphate in place of it, sometimes using a little salt to improve.
New York City. E. PARMLY BROWNE.

A. Stone-cut fissure drills, Nos. 56 and 57 (S. S. W.), followed up with corundum wheels, to obtain the desired shape and smoothness. Have used the centered root trimmers, as well as the ordinary finishing burs, in connection with corundum wheels, but prefer corundum in suitable shape.

B. Fresh chlorinated lime and a fifty per cent solution of acetic acid, packed in the tooth with non-oxidizing aluminum instruments. Hermetically seal the root of tooth to be bleached, with any material that assures perfect closure of apex. This precaution will prevent irritation from the chlorine present in the lime. Filling the root generally one-third full of soft gold will obviate any danger to the peridental membrane. G. A. ENGLERT.

Catskill, N. Y.

A. For cutting off teeth, I use wheel-shaped burs. Cut groove in labial and palatine surfaces; then with excising forceps—the beaks of which are placed in these grooves—quickly and firmly remove the shell or crown with as little jarring as possible. Finish with suitable corundum wheels and engine root-files. If tooth is badly decayed, and pulp dead, I use large wheel-shaped burs and ream out the dentine, then the enamel; or, in other words, cut from within outward.

B. For bleaching, I use chlorinated lime, with about fifty per cent solution of tartaric or acetic acid, made into a paste. Thoroughly cleanse the root canal; fill the canal at apex; ream canal out with bur or drill; then wash out with aqua ammonia, and pack paste up to the apex. Fill with cement, allow three or four days, and repeat the process. This, as all other things, fails sometimes.

Bellville, Texas.

THOS. P. WILLIAMS, D.D.S.

Aluminum.—Its Cheap Production and General Use.—Its Utilization in the Dental Profession.

FROM "THE INVENTIVE AGE."

IT has long been known that the element aluminum was more abundant than any other metal; in fact, that the stability of the crust of the earth on which we tread is largely dependent on the strong cementing bond of aluminum that holds the rocks and clays in such a firm grasp that even the elements and the tooth of time cannot destroy it. So strongly has aluminum held all other elements in her embrace that it has greatly baffled the skill of the alchemist ever since its first discovery to separate it, *i. e.*, to obtain it in a state of purity from its environments.

Sir Humphrey Davy, in 1807, tried to isolate the metal aluminum by decomposing its oxide alumina with the electric current, and, while he failed in the attempt, the brilliancy of his thought is fully proven in the fact that now, after a lapse of eighty years, aluminum is being produced commercially by the electric current.

Oerstedt in 1824, Wohler in 1827, and Deville in 1854, each distinguished himself by his contributions in isolating aluminum, and the latter especially in determining many of the wonderful properties of this peculiar metal, which has been a puzzle to metallurgists through all these years.

Various means have been sought to extract aluminum cheaply from the clays and rocks in which it is found in such abundance, but, on account of its refractory nature, without marked success, till within a few years or so. The difficulty and expense of producing aluminum, together with the greater difficulty of employing it in the arts, as it could not be cast, welded or soldered, discouraged the employment of capital in its production, and hence it was only produced by chemists in a small way, as a thing of curiosity or novelty, and not of general use in the arts. It has, therefore, remained for a solution of the difficulty of *working* aluminum, easily and cheaply, to create a demand for this wonderful metal which scientists and artisans recognized as possessing peculiar properties that would place it in the front rank of all metals, if a successful method of working it could be devised.

PROPERTIES OF ALUMINUM.

Among these are its extreme lightness, being only one-tenth the weight of platina, one-eighth the weight of gold, and one-fourth the weight of silver, copper and iron.

Like platina and gold, it possesses the royal properties of not oxidizing or tarnishing by exposure to the air, or being acted on by nitric and sulphuric acid. Unlike silver, copper and iron, it is not acted on by sulphur, and hence does not turn black like silver and copper, or red like iron when exposed to sulphurated vapors.

Aluminum is very malleable, and may be forged or rolled as perfectly as gold or silver. It is beaten into as thin leaves as either of these metals, as no other useful metal can be, and is now largely used instead of gold and silver for decorating, as it is much more durable than silver and less expensive by far than either gold or silver.

It is very ductile, and can be drawn into exceedingly fine wires that by annealing becomes very flexible and tenacious.

The tensile strength of aluminum, in proportion to its weight, is equal to steel; and alloying steel with only a small per cent of aluminum gives to steel double the usual tensile strength.

As a conductor of heat aluminum has no equal, taking it rapidly and parting with it slowly. While it is a good conductor of electricity, it is non-magnetic, and hence well-adapted for the manufacture of surveying, mathematical and astronomical instruments, as well for watches from the case to the hair spring.

It is susceptible to great variety of temper by annealing, can be made soft and flexible, or by tempering can be made hard and rigid.

Aluminum is very sonorous, having a musical metallic ring resembling silver. It can be used to much better advantage than silver for plating baser metals, and may itself be beautifully electroplated with gold.

APPLICATION IN THE ARTS.

In view of all these properties, aluminum has long been looked to as the coming metal that would take a prominent place in the arts, whenever it could be *successfully worked*, and *cheaply* produced, and hence there have been many inventors and thinkers engaged during the last quarter of a century to solve these two difficulties in the way of its universal introduction.

Civilization moves in cycles, epochs, or ages. In its early period there was the stone age, then came the iron age, and now we are entering the aluminum age, which is evolving very rapidly, and, like evolutions generally, with an accelerated speed.

These advances in the evolution of man have not been accidents, but have come along in an orderly way, and have been the fruitage of an aspiration of benevolent thinking minds, seeking to alleviate the ills and enlarge the good to their fellow-men,

From a single profession born with this century, and within the United States, has come some of the greatest blessings of the century to the civilized world.

To Dr. Morton, a dentist of Boston, are we indebted for the discovery and application of anesthetics for the alleviation of suffering in surgical operations. To Dr. Gray, of Chicago, belongs the credit of inventing and making public the telephone, while to Dr. Carroll, a dentist of Meadville, Pa., belongs the good fortune of solving the long sought problem of casting, welding and soldering aluminum successfully, and thus rendering its use practical in the arts. This success was attained through years of experiments with aluminum, to supply his patients, who had been so unfortunate as to loose their teeth, with a more perfect substitute than had hitherto been devised by his profession.

Men of advanced thot in the dental profession, recognizing in aluminum the properties of lightness and strength, conductivity and purity, peculiarly fitting it

for a dental plate, sought to use it for that purpose a quarter of a century ago, but, alas! no one could solder it as they did gold, or cast it successfully. The difficulties in the way of casting aluminum are, first, its extreme lightness, which precludes it being poured when melted into a mold, so as to take a fine sharp cast; and, second, its great contraction in cooling prevents it taking accurately the form of any desired model. After a long conducted series of experiments, Dr. Carroll entirely overcame this difficulty by first making the aluminum of commerce, which always contains quite a large per cent of iron and silica, *chemically pure*, and then alloying it with a small per cent of royal metals that overcame the contraction. Then he devised an automatic gas, or gasoline furnace, with pneumatic crucible appliances, whereby the aluminum is under perfect control when melted and can be forced by air into a matrix of any desired form with perfect accuracy.

Mr. Richards, in his valuable work on aluminum, published in 1887, said "no one knows how to cast it," and "if any one would take up the casting of aluminum, and bring it into vogue as a current industrial operation, there is no doubt the metal would be freely used in the finer branches of practical mechanics." This statement has been fully verified, as shown by the increased demand which has sprung up since the difficulties of working it have been successfully demonstrated by the Carroll methods. This increased demand for aluminum has stimulated inventors and capitalists to embark in this enterprise, resulting in the production of aluminum much cheaper and more abundant; so that instead of only a few pounds being produced and sold at a cost of fifteen dollars a pound, as was the case two years since, now tons are produced and placed on the market at less than two dollars per pound. Until recently France, England and Germany possessed the monopoly of the entire out-put of aluminum made by the old Wohler and Deville sodium process. But history repeats itself, and now the suggestion of Davy of producing aluminum by electricity, after a lapse of nearly a century, has been made practical here in the United States, and large quantities are being manufactured very cheaply at Pittsburg, Pa., Newport, Ky., also by the Carroll Aluminum Manufacturing Company, of New York, with a branch office at Washington, D. C., who claim to have the cheapest method yet invented of producing pure aluminum successfully. This company is organized with a large capital for manufacturing aluminum in the arts, and propose to manufacture cutlery, table ware and many other useful and ornamental articles from aluminum. They are now supplying the leading dental depots with their aluminum dental appliances.

This company states that it will only be a short time, at the present progress being made in the production, when the price of aluminum will be as cheap, bulk for bulk, as iron, when its use will no longer be confined to small articles, but will be used in combination with, or as a substitute for, iron and steel.

Dental Laws.—I think the dental laws of New Jersey and of Massachusetts are in direct opposition to the National Board of Dental Faculties. The Board of Dental Faculties meets every year at the same place and time as the American Dental Association, and it is that board which governs the different dental colleges throughout the country. Having a board of that description, where all the reputable dental colleges are represented, I should think that would be sufficient; and I am of the opinion that in time it will rest with the Board of Dental Faculties to decide who shall and who shall not practice dentistry in the United States. New Jersey recently passed a law which prevents us from going there to practice, except to extract teeth. We would have to pass its Board of Examiners before we could practice in New Jersey. I think the laws of all the States which require dentists to pass the State Examining Boards, or Boards of Censors, will eventually be annulled, and that the Board of Dental Faculties will govern the dental profession throughout the United States.—*Dr. Walker.*

"The North-Western Dental College."

FRIEND WELCH:—Your favor is at hand. The concern mentioned is no college at all; simply a cheap dental office of the common stripe. Under the incorporation laws of Illinois three men, be they dentists or blacksmiths, can secure, for a few dollars, a charter for a dental college. There have been issued already fifteen, and will continue to be issued.

There are no "clinical professors" in this cheap-John concern. An advertisement in the *Tribune* is published as an editorial notice. It is strange how people will be gulled, when, if they read the card you send me, they would notice the contradiction embraced in it, as follows:—"Every operation, of every kind, for every patient, is here performed free," only a small charge made for material;" and then follows a schedule of prices: Gold fillings, one dollar "up," and they prove up to an extent usually charged for good work in a good office.

There is no way of preventing these frauds in this free country, so the public must endure them.

L. P. HASKELL.

Chicago, July 25, 1890.

EDITOR ITEMS:—The July number at hand, and, as usual, I read it through, advertisements and all, and note the good things and pertinent suggestions it contains. The dentist who follows the methods laid down in the ITEMS, from time to time, can seldom go amiss; and when the editor brings his "trenchant shears" and paste-pot into action—well. On page 319 a clipping from *The Dental Review* informs us that narrow strips of corset steel may be made into breeches. Now, I would like a pair of these same "breeches" myself. For durability, they would beat the famous pair that "Bryan O'Linn" made, and, with a suitable ether spray or chloride of methyl attachment, they could be made cool and comfortable in summer, or with a hot air syringe, or Southworth's flash lamp, properly applied, would temper the wind to the shorn lamb in the winter, and, then, what a boon to the poor dentist who sits in his office waiting for patients! 'Twould obviate the ravages of time and friction that even the average "Prince Albert" cannot always conceal. With suitable reinforcement, the young man that visits his best girl, and stays too late, or early, could defy her irascible parent that wears number elevens. Or they could be made to take the place of a toboggan. But enough. I am something of an inventor myself, and am apt to become too enthusiastic when a new field opens. I presume that "The Wilmington Dental Manufacturing Company," with their usual enterprise to be in the field first with any new dental appliance of merit, will at once put in the necessary machinery to manufacture this "long felt want." So please send me your full descriptive circulars, with directions for self-measurement, that I may place my order at an early date.

Yours,

Auburn, Neb.

G. W. CLUTTER.

Judge Sawyer, late of the Supreme Court of the United States, defines an invention in the following language:

"Invention is the work of the brain, and not of the hand. If the conception is practically complete, the artisan who gives it reflex and embodiment in a machine is no more the inventor than the tools with which he works. Both are instruments in the hands of him who sets them in motion and prescribes the work to be done. Mere mechanical skill can never rise to the sphere of invention. The latter involves higher thought, and brings into activity a higher faculty. Their domains are distinct. The line which separates them is sometimes difficult to trace; nevertheless, in the eye of the law, it always subsists. The mechanic may greatly aid the inventor, but cannot usurp his place.

Party is the anvil on which our chains are forged; partizanship is the anesthetic that puts us to sleep while it is being done.

Dr. James B. Sherwood has just died at the good old age of seventy-two, in Murray, Ky. He has been a somewhat prominent figure in New York and Philadelphia, and was one of the pioneers of the gold field of California. Finally settling in Murray, he followed his profession for many years, till infirmities of age required him to retire.

"Mrs. Wm. L. Bradley, wife of a millionaire," says the *Chicago Times*, "started out to make some calls. She slipped at the entrance of the residence of a friend and broke her arm. A doctor was summoned who administered chloroform and proceeded to set the arm. The plate of a false tooth which Mrs. Bradley wore, unknown to the doctor, dropt in her throat and covered her windpipe, and she was dead before it was noticed." Another warning to careless doctors.

EDITOR ITEMS:—The Illinois Dental Society, at their Springfield meeting this year, devoted the most of their time to the "advertising dentist." The most enthusiastic men on this subject and discussion, condemning the advertisers, are the men who are solely responsible. The officers of colleges who will receive into these institutions men unfit even for mule drivers, and expect to make dentists of them, should not be so hard on them, after they have received their fee and given them the proper documents for such business.

T. H. DOWNING.

Macomb, Ill., July 3, 1890.

The Post-Graduate School of Prosthetic Dentistry and Dental Laboratory, of Chicago, is now open the year around. Students may enter at any time. Dentists desiring instruction in crown, bridge, or continuous gum work are advised to "seek the seclusion" of the Chicago school for one month at least, which length of time is deemed sufficient to instruct them in the specialties taught by Prof. L. P. Haskell, and his able assistants.—*Dental Advertiser*.

It is said there is a fine opportunity for a few good, bright American dentists to locate in Madras and Bombay. Dr. Chester, a medical missionary, and a brother-in-law of Bishop Whittaker, of Philadelphia, says that Madras is a city of 300,000 population, and has not a single American dentist there. He knows people who travel from there to Bombay, nearly 1,000 miles, to have a tooth filled. There is only one good dentist in Bombay, and he refuses to fill teeth with gold, using a sort of cement that is not lasting. He charges \$7.50 for pulling a tooth. A few good American dentists could go over there now, and at once step into a big business.—*Dental Advertiser*.

Replanting.—August 3 of last year I replanted the right upper second bicuspid, after having extracted it. It was badly abscessed. I simply removed the abscess from the apex of the root, cleansed the tooth with warm water, syringed the cavity with dilute carbolic acid, and returned the tooth to its socket. It was quite sore for a short time and sloughed for a time, but these symptoms gradually disappeared, since which he has had no trouble with it.

A. M. BUSH.

Washington C. H., Ohio.

There is an effort now being made to frame a uniform dental law to be presented to each State legislature, providing that a person who is qualified to practice dentistry in one State may, if he chooses, practice in any other State without further examination.—*Dr. Carr*.

DR. T. B. WELCH:—Please ask the readers of ITEMS OF INTEREST the best method of preventing a patient throwing his lower jaw forward when taking an articulation. I am bothered a great deal sometimes.

G. M. M.

Jersey City, July 11, 1890.

For Our Patients.

Chewing Gum.

P. C. JOHNSON, D. D.

DID you ever see a lady chewing gum?
Did you ever sweetly ask her,

Give me some?

Of all the sights to see,
In this wonderful *coun-tree*,
Is a spruce and dandy lady
Chewing gum.

CHORUS.

Chewing gum, chewing gum,
Is all the rage to-day;
From the youngest to the oldest,
From the gravest to the gay;
In the mansion, in the hovel,
In the school-room, in the slum—
Everywhere! you'll see the ladies
Chewing gum.

Just you watch her pretty jaws
Chewing gum;
Like a saw-mill and its saws,
Hear 'em hum!
Now a motion, then a jerk—
With what vigor they can work
Masticating—that is, *chewing*—
Chewing gum.

Chorus, &c.—

While she's talking she is busy
Chewing gum;
All her thinking is about her
Chewing gum.
And her mouth goes wiggle waggle,
Like a bucking broncho's saddle,
With her everlasting chewing
Chewing gum.

Chorus, &c.—

Please give me a definition of a "Dental Physician;" it is too much for me, and yet there are a few buds here about blossoming out with this appellation.

C. E. DAVIS.

A Fourteen-year-old boy, living near Eastport, Me., started from his home at six o'clock in the morning, walked to Eastport, had three teeth extracted, one filled, attended to several small errands in town, and walked home, completing the journey of twenty-three miles at 3.30 P. M.

Come High, but we Must Have Them.—"What are your charges, doctor?"
"Three dollars a visit."

"Well, we don't want you to come on a visit, but just to stay ten or fifteen minutes."—*Puck*.

Editorial.

The Teeth During Pregnancy.

FROM the essays and discussions of many dentists one would be led to suppose pregnancy was an abnormal, diseased condition. But it is not. It is one of the healthy activities that should be considered with the utmost interest. "This misfortunate, unpleasant, trying, and hazardous condition," says one dentist, treating on this condition, "is full of dangers, diseased activities and unnatural appetites, longings, and imaginative forebodings." This is nonsense, untruthful and misleading. It is not an unfortunate condition, but a fortunate one. Nor is it hazardous—few die in this condition; and it is as often the cause of better future health than of poorer.

The teeth sometimes suffer during this period, but this is not a usual concomitant; and this eternally classing such people as *patients* is officious interference.

It is true, the system takes on a new condition, with new requirements, appetites and demands, but none of these are necessarily abnormal; and tho there may be some disturbance in the normal activities, these may be but evidences of unusual demands, made necessary by artificial civilization; for we find the nearer we go toward the savage, or even toward a rustic, the fewer disturbances there are during these periods.

A college professor says that during pregnancy "the patient" (what an idea!) must be fed with bone phosphates, to prevent the destruction of the teeth." There are times, both during this period and many other conditions, when the phosphates—or rather, the phosphites—should be a prominent ingredient of our food. But even then it should be an ingredient of the food itself, and not a substance added.

This writer says: "It should be bone phosphate of lime in solution, or in the form of powder, spreading it on the food to be eaten, or distributing it over the food with a pepper-box, literally using it as a diet, till the system is *saturated* with it; at the same time, it will be well to use lime-water, natural Vichy water, ever dieting toward the alkaline."

We are of the opinion few pregnant women will be found willing to subject themselves to such an ordeal, and if they should, that they would find themselves benefited. An acid condition of the digestive organs is the natural condition, *necessary* to assimilate food into healthy blood. Any of us may have a predominance of acidity, and quite as surely we may have a predominance of alkalinity. So, also, we may have occasion for foods with a predominance of the phosphites; but, for some reason, not yet satisfactorily explained, everything taken as food must be a food, to have it assimilate into an integral part of the blood.

By the by, why is lime-water here placed in the catalog of alkalies? Is it an alkali? Ask your washer-woman who throws an alkali into her hard-water to make it soft. So with all these salts of phosphate, lime, etc., found in the body. Are they alkaline?

Immunity in Activity.—It is often wondered why physicians, students, nurses, and the like, so rarely fall victims to contagious and infectious diseases. The exercise of ordinary antiseptic and disinfectant precautions is not in itself sufficient to account for such general immunity, but the fact has been abundantly illustrated that susceptibility to infection is developed in an inverse proportion to the bodily and mental activity of those exposed to the risk. So long as all concerned are actively employed, mentally and physically, in attending to the treatment and necessities of the sick, the perils of their occupation are almost reduced to a minimum. The nerve centres are *too busy* converting potential energy into motor power to attend to much else, and are in no fit condition to receive morbid impressions. But to lazily lounge in the chamber of disease, or to aimlessly linger in a stricken district without activity of mind and body, leaves the nerve centres without occupation and free to take up impressions they might otherwise have repulsed.

The Queen of Metals.

ALUMINUM is growing so rapidly into general favor, and all industries are so completely captivated by its wonderful charms, that it is sometimes called *The Queen of Metals*. Heretofore its production has been so limited, its manipulation so uncertain., its alloys so delicate, and its casting, soldering, and welding so difficult, that, tho its value has not been altogether ignored, we have been little more than playing with it as a toy, experimenting with it as a curiosity, or vexing ourselves with its stubbornness. But now it can be cast, welded, spun, drawn into the smallest wire, rolled or beaten into the thinnest foil, and conformed to the most beautiful impression of the most delicate matrix.

A few persistent scientists have quietly worked at the many problems presented by its mysterious qualities, so that the last two years have disclosed wonders in this metal not dreamed of by the most sanguine investigators.

As the applications of aluminum to the sciences and arts, and especially to the various industries, have been disclosed, we have been put to our wits' end to find a sufficient quantity, and to so cheapen its production as to bring it into economical use. As, for instance, one man finds that by adding one-half of one per cent of it to his pig iron which was so friable he could hardly sell it, his bars can be worked almost like wrought iron—drawn out, twisted, and welded. In castings for plates, as for stoves, it does not warp; and the iron takes on a much smoother surface and a brighter polish than common iron. Tho a half of one per cent is a small proportion, this man requires many tons a year.

The demand of any article generally makes a supply. And this is not a mere hap. Providence is continually leading us on in civilization, and as continually responding to man's genius in showing him what all this advance in civilization requires, and each discovery comes just when it is most needed. While this man in Pittsburg was discovering his need for aluminum for his iron, two young students in Cincinnati were discovering a mode of producing this metal abundantly and cheaply. Its price has rapidly fallen from \$25 to \$15 a pound, then from \$15 to \$10, then from \$10 to \$5, till now these two young men supply it at Pittsburg at \$1.90, while Dr. C. C. Carroll, of New York, president of *The Carroll Aluminum Manufacturing Company*, 145 Fifth avenue, is able to produce it at fifty cents a pound, and makes a good profit at that.

Aluminum, as an alloy with other metals, is a wonderful production. Every metal with which it is allowed to unite is marvelously changed. Copper is made to look like gold, silver takes on the spring, strength, and toughness, of steel; to iron is given the tone of silver bells, and the finish and many of the qualities of steel, while steel is lifted quite out of its accustomed sphere.

Anything plated with it, even iron, will not rust, and cutlery made of it will not even tarnish, tho subjected to the salt water of the ocean, while the knife may be brought to as nice an edge as tho of steel. Such cutlery has a remarkable spring, a tenacious toughness, and great strength, lightness, and durability, retaining a beautiful polish.

These qualities make it invaluable as a material for all parts of a watch.

For acid baths and cups, even where nearly all the strongest acids require boiling, it takes the place of platina, so that this increasing expensive metal will be largely relieved from this service, and thousands of pounds thrown on the market. To give an idea of the increasing demand of platina in the arts and industries, three years ago we paid for it \$6.50 an ounce, which was a rise of \$1.50; two years ago it went up to \$9; last year to \$11, and the last we bought, a month ago, cost us \$13.50 an ounce, with notice that the next would be \$18 an ounce.

The non-electric character of aluminum makes it peculiarly adapted for compasses, both for surveying and navigation; for when they are made of this metal the needle is not affected by the presence of iron or other metals.

But we cannot here enumerate all its qualities, applications, and uses.

"I Make it Too Long."

DR. BLAKENEY, editor of *The Practical Dentist*, reminds us of a dear soul at a camp-meeting. He could not "get into the liberty." Finally the leader said: "Now, Brother Blake, tell us plainly, what is the hindrance?"

"Well," said he, "I know of no hindrance but this,"—spreading his hands from in front of him till they were stretched apart to their full extent: "This I think is my great hindrance, I am apt to make it long."

"But," said the leader, "tell us what you mean; we don't understand you."

"I say I am apt to make things long," and again he spread his hands to their full extent. "Some call it 'stretching' it." It is hard for me to tell a thing just as it is, I am so apt to make it long by putting in something that does not belong there. I stretch a story and color it, to fix it up, till it is hardly truthful. O, how I have grieved over this great fault! I can't tell a simple, unvarnished story; it seems as tho I must fix it up a little."

The Practical Dentist says:

"*The Practical Dentist*, October, '89 issue, predicted the rise in the price of artificial teeth that has taken place. We knew then that the labored effort of all the journals in the combine to educate the profession into the belief that platina was becoming exceedingly scarce and high was for a sinister purpose. Well, as a profession, we are beginning to feel the grasp of an iron handed Monopoly tightening about our throats and we must expect to be hurt. It is no consolation for us to know that notwithstanding platina has advanced a little in price, artificial teeth sold at the old figures would afford the rich Barons, who manufacture them, over two hundred per cent profit."

We like to see Friend Blakeney go for these terrible animals that "showed their teeth and growled" "at their last exhibition." He has such a fund of humor, we enjoy it. If he didn't exaggerate we should like it all the better, for he is a good fellow, like the camp-meeting man, with only this fault. We all have faults, and he that shows anger at having them pointed out, shows weakness, if not guilt. We can learn much from our critics, and more from such a critic as Dr. Blakeney, who makes us smile at the very manner in which he criticises us.

There is nothing like "the fool of the ring" to stir up the animals, and he is generally the smartest man of the circus, but he must be careful not to so conduct himself in his genuflections as to be taken for one of the animals himself, or as having a desire to be one.

Frequently we have to buy twenty ounces of platina for our gold and platina alloy, when we are made painfully conscious that "platina has advanced a little in price." Eighteen months ago this quantity cost us one hundred and twenty dollars, now we pay three hundred and sixty dollars, and it is still advancing, and will soon approach the price of gold.

Is it just, fair and honorable for Dr. Blakeney to charge nearly all the dental journals of the United States with "a labored effort to educate the profession into the belief that platina was becoming exceedingly scarce and high from a sinister purpose?"

Stand up, Brother Blakeney, and confess, with the camp-meeting man, that "I make it too long." "That it is hard to tell a thing just as it is."

Success of Implantation.—We saw, the other day, a case of implantation by Dr. Younger, of San Francisco, of over four years' standing. It was an upper central incisor for a colored employé in S. S. White's dental depot in New York. There had been no trouble since its implantation, and is now firmer and more like his own teeth than when we first saw it, three months after it had been implanted. We have seen two other teeth implanted in California by this gentleman, in the mouth of a distinguished lady, who avers she has had no inconvenience from them during the three years they have been implanted. It required the closest scrutiny to tell which they were. We have seen other implanted teeth equally successful.

Prof. L. L. Dunbar and the College of Dentistry in the University of California.

BY an oversight the sketch of this worthy man was omitted from our July issue, in which his portrait appeared.

Professor Dunbar is the energetic Dean of the Dental Department of the University of California. The dentists of California had a long and perplexing struggle to make themselves felt as a *profession* in California, and then a still greater trial in establishing a dental school, such a school as would take away all excuse of dental students to make the tedious, expensive and long trip to Eastern dental colleges. After much study and labor, and not a little expense to a few, this Dental Department of the University of California was opened, officered and furnished. It has had a decided success. Professor Dunbar has proved to be the right man in the right place, and is bringing dental education up to a first rank.

The College of Dentistry of the University of California was organized by the Board of Regents, by act of September 7, 1881, on a recommendation from the Medical Faculty of the University, submitted May 28, 1881.

The college was given accommodations in the Medical Hall of the University, and provided, by courtesy of the medical faculty, with spacious clinic and lecture rooms. The college is now in its ninth session, with sixty students in attendance. Unlike similar schools East, the sessions are held in the spring, summer and autumn, the term beginning February 1 and ending October 31.

The course of study is a three-year graded course. Twelve calendar months of office tuition is taken as equivalent to the first year. There are two general examinations for entrance held on fixed dates, and conducted by a disinterested examiner chosen from among the prominent educators of the city; the standard being fixed each year. In 1888, when this plan was first adopted, the rejections were over fifty per cent; they now average thirty per cent. In spite of this fact, the classes have more than doubled, and the wisdom of the plan is shown in the better class of material admitted. The faculty are endeavoring to do good work, and the school has an evidently prosperous career before it.

"Degrees Should Not be Conferred on Poor Young Men."

SO says Dr. A. Dent on page 402.

That would certainly shut out a large number, probably a majority, of those who graduate in medicine and dentistry. It would have shut out me; for while I was at college my wife had to keep the family and me, too; and I was not the only one of that class who was thankful for any odd chore to eke out our daily bread. I had to live on one dollar and a half a week during the first term, and on seventy-five cents a week during the second term. But I worked, and studied sixteen hours a day, and was promoted to the third term class before the end of the second term. And *I guess* I graduated with as much honor as any rich young man in the school. Yes, and became established in successful practice as soon.

Who of our graduates, in either our literary or our professional colleges, attain the greatest success—the rich young men, or the poor? I would not disparage money—there are few young men, or old men, either, who would not accept a few thousand dollars, in any condition of life, especially to prepare for and to begin a professional life,—but there are more students spoiled by it than are spoiled by poverty; and there are less made brilliant and successful by it, than by the struggles of poverty. Why, we have seen many young men, flush with money, walk through college, and know much less than some who had to crawl through; and, when the door at the other end of the college hall was opened to these moneyed young men, that they might walk into the profession, I have seen poor young men crowd by them and wedge themselves into the good graces of the community while your rich young men were smoking their cigars and drinking beer.

The Colorado Dental Society.—Perhaps the ITEMS and its readers would like to know that we are doing something in the way of State meetings away out here in the Rockies. The Colorado State Dental Association held its fourth Annual Session June 24-26. The attendance was good, and many are beginning to learn the importance of such meetings, especially since our Examining Board is making its influence felt, and sending a few back East or further West as they choose. Our papers were: "Dental Caries as Influenced by Acids," Dr. H. A. Tyme, Central; "Dentistry of To-day," Dr. M. H. Smith, Colorado Springs; "Microbes," Dr. A. H. Sawins, Denver; "Separating Teeth Previous to Filling, Is it Advisable?" Dr. W. E. Griswold, Denver; "Does Altitude Affect the Teeth?" Dr. G. Dodge, Leadville; "Fees," Dr. J. M. Porter, Denver; "Pulpless Teeth," Dr. H. P. Kelley, Denver; "Pyorrhoea," Dr. P. T. Smith, Denver.

The next session will be held commencing the first Tuesday in June, 1891.

J. H. PARSON,
Secretary.

The Virginia State Dental Association will hold its twenty-first Annual Session in the High School building, at Roanoke, Virginia, Tuesday, August 26, 1890, beginning at 9 o'clock A. M. We confidently expect this to be the largest and best meeting the Association has ever held. All members of the profession are invited to attend and will receive a cordial welcome.

J. HALL MOORE,
Corresponding Secretary.

The State Board of Dental Examiners will meet at the same time and place for the examination of candidates to practice dentistry in the State. All applicants must be graduates of some reputable dental college.

Richmond, Va., July 11, 1890. W. E. NORRIS,
Secretary.

The Southern Illinois Dental Society will hold its fifth Annual Meeting at Chester, Ill., commencing on Tuesday, October 21, and continuing three days. Members of other dental societies, and all reputable dentists, are cordially invited to attend.

L. T. PHILLIPS,
Secretary.

Catching's Compendium of Practical Dentistry is progressing finely. It is a work that every dentist and dental student will need. We think there will be few libraries in dental offices without it, when it is once on the market. The Doctor has something interesting to say in our advertising pages.

The Student's Manual and Hand-Book for the Laboratory, by Prof. L. P. Haskell, should be in the hands of every student of dentistry. It is published by The Wilmington Dental Company, Philadelphia, Pa., at \$1.50.

The Dixie Doctor.—If any one wants a spicy, practical, live, medical journal, let him send for *The Dixie Doctor*, Atlanta, Ga., \$1.50. It is emphatically the busy man's journal.

"Best Teeth \$5 a set; old teeth all drawn, with air, for \$1; single teeth, 25 cents; best filling, 50 cents. Open all hours. Burrows, dentist, 132 Michigan avenue, Telephone 215."

Beecher's Dental Directory of the United States, fourth edition, is now ready. It is, no doubt, the most accurate of the series. It also contains a list of all dental dealers and magazines. Dr. M. P. Beecher, 834 Broadway, New York. Price, \$3.00.

This will be found of great convenience to many; in fact, dentists themselves so often want the address of particular dentists or business houses that this book should be in every dental library. A man who tries so hard to keep up with the ever-changing list of United States dentists should be encouraged.

Miscellaneous.

Danger of Wet Cellars.

SCARCELY anything is more prejudicial to good health than wet cellars. Rheumatism, bronchitis, pneumonia, and malarial affections, including neuralgia and sciatica, are some of the dangers to be apprehended. Damp cellars mean foul and noxious air, and should be sedulously avoided. Now, before the rains come, while the water or moist line is considerably below the surface, is the proper time to prevent these evil influences. Drain tiling, laid outside and a foot below the base of the foundation, and running diagonally across the cellar, and connecting with the outside drains, and thence leading to the street drain, or some low ground, is the best and perhaps the only safe way to drain, not only the cellar for a foot below its surface, but the out-lying ground for several feet in all directions from the house. This drain, while having a free outlet, should furnish no opportunity to put in it anything but what is extracted from the soil. It should never, on any conditions, have any connections with sewage, nor receive any kitchen slops or surface water, and should be well below the frost line. If possible, the cellar floor and the sides of the wall, as high as the surface of the ground outside, should be well cemented. It is well, owing to the great porosity of brick, if used for foundation walls, to have intervening layers of cement, so as to prevent, as far as possible, the upward passage of the water by absorption. This drain should be laid as far as possible from the well, lest in some way its contents should be emptied in the well and contaminate the drinking water. The expense of such drainage and wise precaution would be but a trifle—especially if, by its neglect, a protracted sickness, with its doctor, and drug and nurse bills, and eventually a funeral, should be prevented.

The soundest wisdom and strictest economy favor the adoption of all measures that lessen, or reduce to a minimum, the dangers from preventive diseases. —*Monthly Bulletin Iowa State Board of Health.*

How Gold is Shipt.—When one recalls the fact that millions on millions of dollars in gold annually seek Europe to provide for the necessities of our import trade, the question of how gold is shipt to Europe becomes interesting. The Bank of America is the largest single shipper of gold from New York, and, indeed, from the United States. Shipments are made in stout kegs, very much like the ordinary beer-keg. Every one contains \$50,000 in coin or bar gold. The latter is the favorite for these shipments, since the Government has permitted the Sub-Treasury to exchange bar gold for coin. In a single million dollar shipment loss by abrasion is from eight to twenty ounces, or from \$128 to \$320; while the bars only lose about three-fourths of that value. When coin is sent, double eagles are preferred. They are put in stout canvas bags, each one containing 125 double eagles, or \$5,000; and ten bags fill each keg. About the only precaution taken against tampering with kegs, is a treatment of keg ends technically known as "red-taping." Four holes are bored at equal intervals in the projecting rim of the staves above the head. Red tape is run through these, crossing on the keg's head, the ends meeting at the center, where they are sealed to the head by the hardest of wax, and stamped with the consignor's name. The average insurance is about \$1,500 per \$1,000,000. Then there is an expense of about \$2 per keg for packing and cartage aboard ship, or \$200 for the same sum and the inevitable loss by abrasion, whatever it may prove to be. There are great Wall street firms shipping from \$25,000,000 to \$40,000,000 annually. Some of these have for years insured themselves, and assert that the saving has been sufficient to replace a loss of \$1,000,000. These are large figures, but this has become a country of large figures and affairs.

Colorado still stands at the head of the list of precious metal-producing States, having given to the world in 1889 an aggregate product of gold and silver of over \$24,000,000. Montana stands next with \$22,894,000; while California is compelled to be content with the third place, having produced last year only \$14,034,000, of which, however, \$13,000,000 was in gold. The total gold product of the United States was \$32,800,000.

To Remove Thirst.—Paint the tongues of your fever patients with glycerin, says a physician; it will remove the sensation of thirst and discomfort felt when the organ is dry and foul.

The Infrequency of Deaths by Lightning.

IT is probably idle to tell people that there is a thousand times the danger in the sewer pipes that there is in the thunder clouds, but it is true all the same. The deaths by lightning are few indeed. Who of the readers of this paragraph, says the *Hartford Courant*, ever lost a friend that way? Who of them hasn't lost a score of friends by the less brilliant and less noisy destruction that comes up out of the drains? The trouble with the lightning, or the trouble that it gives the people, is in its indescribable suddenness and its absolute uncertainty. You know neither when it is coming nor where it is going; all you feel certain about is that some storms leave a number of catastrophes to mark their course. The caprice of the lightning defies the explanations of science, and there is no predicting beyond a few generalities. This much it does seem safe to repeat, even in a lively lightning season, that the increased use of electricity, with the multiplicity of wires, has tended to fewer fatal strokes of lightning in cities.

Some Valuable Uses of Antipyrin.—Considerable evidence has been advanced as to the value of antipyrin. Dr. Jean Pouisson gave an account of a number of his own experiments. In chorea his success was remarkable. Of nineteen patients treated with antipyrin, eleven were completely cured, while six were greatly improved; and even in two extremely severe cases there was great improvement in the patients' condition. In nocturnal incontinence of urine his results were striking: eight patients suffering from this affliction were treated with antipyrin, and all eight were completely cured, tho a number of them had suffered from nocturnal incontinence for years, and had proved rebellious to all treatment. After the cessation of treatment the encuresis did not again appear. The amount given in twenty-four hours varies from thirty to sixty grains, according to the age of the children. The author advises its administration in some alkaline liquid, Vichy water for example, rendering it more readily taken by children; or it may be sweetened.

The Jaw of the Feeble-Minded.—In an equal number of strong and of feeble-minded persons the larger percentage of irregularities is found in the latter class. These deformities do not confine themselves to V-, saddle-shaped and high arches, but statistics show a very large percentage of arrested development of maxillary bone, partial V-shaped arch, excessive growth of the superior maxilla, and protruding upper and lower jaws. These abnormal conditions of jaw are developed in harmony with other abnormal growths: as arrested development of organs, nerves and excessive growth of tissue.—*Dr. E. S. Talbot.*

It would appear strange that the Jews, who are almost universally a town-dwelling race (only two per cent follow agriculture), are so much healthier than other people. The average duration of their lives is forty-nine years, against thirty-seven of the Christian. But this vitality is explained by their sobriety and cleanliness, domestic and personal; by the almost selfish care they bestow on themselves, and those belonging to them, and by their forethought and general prudence.

Dextrine Musilage.—Four hundred parts of dextrine are stirred into four hundred parts of water; then add two hundred parts more of water, twenty parts of glucose and ten parts aluminum sulphate; heat the mixture to one hundred and ninety-five degrees Fahrenheit, when it will become thin and transparent.

To fill up cracks in a boat, melt equal parts of pitch and gutta-percha in an iron pot; thoroughly mix by stirring. Make up in sticks and melt into the cracks with a warm iron.

To Cure Chapped hands, and give a soft, clear, healthy skin, thoroughly mix 4 oz. glycerin in half a pint of water, then add 4 oz. benzoine.

Roaches will not remain in the vicinity of green helibore leaves; even the taste of the decoction of the dried leaves kills them.

It is claimed that warts are easily removed by applying a drop or two of a saturated solution of carbonate of soda, four or five times a day.