in small doses it still is, as it will ever be, a most valuable agent. Headland says that very minute doses can be given in debility, and even in scrofula, in which cases it acts as a tonic by stimulating the functions of the liver. He also recommends the administration of very small portions of the bichlorate of mercury in chronic syphilitic affections, if we wish to secure the special blood action deemed necessary to destroy the poison in this disease. We entirely concur with him in this opinion.

IRON.

Iron is, perhaps, the most popular remedy of the day. It is administered in nearly every form of disease, to all classes of people, and for every variety of trouble in which anæmia is supposed to hold a place. This indiscriminate prescription of iron has grown up in the last few years, and surely needs some correction. The doses given are entirely too large, and unnecessarily tax the digestive functions. This is apparent from the fullness about the head frequently caused by its use.

But a very small portion of iron can be absorbed, and this only by the aid of the acid of the stomach; and if large doses be given, the greater part, if it act at all, must act mechanically, after the manner of bismuth; but the presumption is that it does not act at all, and is carried off as so much waste material, through the intestines. This is shown by the character of the stools. Iron is not truly a tonic; it is merely a restorative. Even in some cases of anæmia it is not a restorative, save in the very smallest quantities. This is owing to the system being so debilitated that it is incapable of assimilating the remedy, and carrying it to its true destination. The tincture of the sesquichloride of iron is decidedly the best preparation we have in liquid form, when given in proper doses. The muriatic acid adds greatly to its efficacy, by its tonic and diuretic effects, apart from the power this acid has of rendering the metal more soluble. Sulphate of iron in large doses is an irritant, but in small quantities proves one of the most certain and powerful of the preparations of this metal. In administering iron it should always be borne in mind that it is not a catalytic agent, and can be only useful to the extent of its absorption into the blood and its action on that fluid. Dialyzed iron, which is a hydrate of iron containing no acid, will, no doubt, in the future, be the only form employed, on account of its being readily absorbed, and its freedom from the bad effects of all preparations of this mineral. Although a strong solution, it possesses no unpleasant taste; does not produce constipation, nor disturb the digestive powers. Its discovery we esteem a great boon indeed.

QUININE.

Quinine is, perhaps, the most potent and unerring of all our remedies, though its precise mode of action does not appear to be thoroughly understood. Like calomel, this chemical has been and is still administered in immense doses in the Southwestern and Western States of this country. This we believe to be very bad and dangerous practice. In ordinary cases of remittent and intermittent fever, not of a congestive character, doses of two or three grains, repeated every two hours, are sufficient. A toxic dose of twenty or thirty grains may forestall an attack of chill and fever, but the reaction that consequently follows leaves the nervous system in a state of depression, and produces a train of very unpleasant symptoms. We are convinced that the continued use of quinine in small doses, for a number of days, or even weeks, or months, if deemed necessary, will be more likely to effect a permanent cure in cases of malarial fever than a large quantity given in one or two potions. In severe neuralgias large doses of quinine are well tolerated, especially if given before the expected time of attack. In these cases the administration of twenty or thirty grains, by causing cinchonism, appears to more promptly and effectually break up the chain of nervous trouble than the same quantity given in divided doses. In the very aggravated forms of pyrexia, too, quinine may be given in large quantities without the usual bad effects following its administration. The great advantage of small doses of quinine is that they can be given to patients in high fever, without causing irritability of the stomach or adding to the general excitement of the system.

ALCOHOL.

Alcohol, too, like quinine, is given in too large doses. A small potion administered every hour more efficiently balances the nervous system, and brings about defervescence by lowering the temperature, than a large amount given at a single dose. The great evil of giving alcohol freely is, that after its influence passes off there is a state of prostration left which compels its continuance or the substitution of some other drug. Alcohol given in small doses acts as a temporary stimulant without producing any secondary sedative influence. In large doses its action is entirely narcotic; a fact that is apparently overlooked by many practitioners, who appear to be wholly ignorant of its physiological effects. As a catalytic agent in cases of poison from the bite of reptiles, very large quantities may be given with impunity, and also in fevers dependent upon the presence of a blood poison in the system. In all other instances small doses, given at proper intervals and with due regard to the temperament of the patient, are not only the safest but the most effectual.

DIGITALIS.

The action of digitalis is not always appreciated by those prescribing it. In large doses it is an exceedingly unsafe remedy, save in delirium tremens and other allied disorders. It irritates the stomach and produces vomiting. This action is independent of its depressing power on the heart, which is produced by the influence it exercises over the functions of the vagus nerve. In small doses, say fifteen or twenty drops of the tincture, digitalis is one of the best cardiac tonics we possess; and in the same quantity it acts most efficiently in those cases of dropsy which result from obstruction of the cardiac circulation. Its depressing power should be always borne in mind and guarded against. In Great Britain half-ounce doses of the tincture are administered, with advantage, in cases of mania-a-potu, but an abnormal condition of the nervous system exists in this disease, which requires enormous quantities of all remedies to produce sedation. The true office of digitalis is that of a cardiac tonic, and its prescription in future will be, no doubt, confined to cases of heart trouble dependent upon obstruction of the circulatory system. In view of this fact its well known efficacy in combination with calomel and squills can be readily understood. Its depressing and irritant effects in large doses interfere with, if not totally destroy, its power as a remedial agent.

TARTARIZED ANTIMONY.

Tartarized antimony is a valuable agent which has fallen

greatly into disuse of late years. Administered in small doses its action is most marked and beneficent. Apart from its catalytic effect in the blood, it acts as a sedative, diaphoretic and expectorant. To produce its true power, it must, according to Laennec, be absorbed in the blood, and this can only be brought about by the administration of minimum doses. Its efficacy in small quantities, as an adjunct to purgative remedies, through its power of relaxing the muscular fiber of the intestines, is very generally known. At one time tartarized antimony entered into the composition of every febrifuge and expectorant mixture, but owing to its being prescribed in too large portions, and consequently producing great vital depression, it lost character as a medicinal agent. This loss of character was, perhaps, also partly due to the great revulsion that has taken place in the practice of medicine in the last quarter of a century. The abandonment of tartarized antimony we conceive to be a very great error. We prescribe it daily in very small doses, with the happiest results, and believe, when properly given, it possesses special merits. In disregarding its use the profession, in our judgment, has lost one of its most useful remedies.

IPECAC.

The effects of ipecac on the economy are very similar to those of antimony, save that it does not act on the blood, and therefore, cannot be ranked as an antiphlogistic. As a neurotic, diaphoretic and expectorant, its power is unmistakable. Its influence on the mucous membrane, in minute doses, is most interesting. We have seen cases of persistent vomiting, which had continued for days, arrested by small quantities of this drug, all other means having failed. Very large doses of ipecac have been suggested recently in dysentery, and its use in this way, if we are to believe the journals, has been very successful. We have had no personal experience in this matter, but we can readily understand in what manner nauseating or emetic doses of ipecacuanha might, by their relaxing effect on the whole system, influence the rectum itself. Small quantities of ipecac, in combination with opium, have almost a specific action in dysentery, particularly if they follow the administration of a saline aperient. In no form is the potency of small doses of ipecac so apparent as in the troche or lozenge, where its specific action on the mucous surface of the throat and bronchi becomes at once evident.

ALOE.

Aloe is another drug not prescribed with sufficient caution. Very small quantities of Barbadoes aloes, particularly when administered with an alkali or some vegetable extract, will act as a gentle aperient. Larger doses, as given in the olden time, are drastic in their action, and leave very disagreeable after results. A striking peculiarity in the action of this cathartic, not generally known, is that an increase of the quantity given beyond a medium dose is not attended by a corresponding increase of effect. Three grains of Barbadoes aloes, made into a pill with half a grain of nux vomica and a grain or two of Castile soap, will, if taken after dinner or before going to bed, produce a gentle daily movement of the bowels without griping or other unpleasant consequences. In these cases the action of aloes is due to the power it possesses of stimulating the stomach. Good rhubarb, too, prescribed in the same manner and quantity, will produce a like result. These are our usual prescriptions for persons of sedentary habits suffering from constipation. Rhubarb is not as good an agent as aloes, for the reason that it possesses astringent qualities, and its use is often followed by a torpid condition of the bowels. Rhubarb is tonic, astringent or aperient, according to the manner and quantity in which it is prescribed.

OPIUM.

Opium is the next remedy the action of which is to be considered. The indications for its administration are as follows: pain, muscular spasms, insomnia and nervous excitation. In small doses opium acts as a stimulant and sedative; in large doses as a narcotic. Small doses frequently given, in case of insomnia, are much better, owing to their accumulative power, than larger ones which stimulate and produce a condition of restlessness and excitement. Save for the relief of actual pain, opium should be prescribed very cautiously, for the reason that it exercises so great an influence by arresting the secretions, and thus interfering with all the processes of life. It is only necessary to administer an eighth or a quarter of a grain to produce its peculiar action on the skin and mucous membrane. This quantity can be taken without any apparent disturbance of the economy. Opium, like quinine and alcohol, may be given in exceptional cases in large portions. Its unpleasant effects, we may here remark, when thus prescribed, such as constipation, nausea, headache, etc., may be greatly modified by its combination with belladonna or hydrate of chloral. Opium, in very minute doses, combined with ipecac, proves one of our best expectorant remedies. Administered either internally or in the form of troches, it stimulates instead of arresting the mucous secretions of the air passages.

Unfortunately the true power of opium is not generally understood, and it is therefore frequently administered unwisely. Its normal influence is exercised over the nervous system. It produces no change in the blood. Its effects occur immediately on absorption, and in this we believe it stands alone among our remedies. To secure this peculiar effect it must be given in minute portions, as narcotism, in the slightest degree, interferes with all its beneficent influence.

GELSEMIUM.

Gelsemium is a much abused agent, owing to a want of knowledge of its therapeutic properties. In England, however, we are glad to know a thoroughly scientific investigation has been entered into and we may in the future expect a wiser prescription of it, based on an accurate acquaintance with its qualities as a remedy. In this country it is given by many practitioners in unnecessarily large doses, and frequently, instead of producing the desired effect on the capillaries, causes a toxic condition, very agreeable, and sometimes alarming. As an antiperiodic, it acts in a manner similar to quinine. The after effects of both, if large doses be given, are poisonous, cinchonism being produced in one case and narcotism in the other. Gelsemium, however, has to be much further tried before it can be classed as a special agent.

SQUILL.

Squill, in small doses, acts as a sedative, though it is never, we believe, given to exercise this special influence. Its power as a diuretic and expectorant is generally recognized, but it is not prescribed in this country to the same extent that it is in Great Britain. Given in doses exceeding one or two grains, it is irritant in its effects, and sometimes proves emetic.

ERGOT.

Ergot is a remedy that is prescribed very indiscriminately. Large doses should only be given in cases of hemorrhage of the uterus, where its specific action on that organ is speedily desired. Its influence over the capillaries is best secured by small quantities given at intervals. This remedy, like many others, is accumulative in its action.

Arsenic, aconite, belladonna and iodide of potassium are also remedies the action of which we would be glad to discuss, but the limits we have marked out for this paper preclude our doing so at this time. Without attempting, however, an analysis of their particular qualities, we venture the opinion that their true physiological effect can only be obtained by the administration of very moderate or even minute doses.

Before concluding, it may not be out of place to state that the action of many remedies is greatly modified or increased by combination with other agents. When we find combinations in nature producing remedial or curative effects, the elements entering into them are always small in quantity. What more agreeable or effectual remedies have we than the natural waters found in the springs in different parts of the world? And yet how small a quantity of the various salts is discovered in these waters by analysis. The same may be said of sea air, than which no more potent influence can be named. Would it not be well for us to take a lesson from nature in this as in many other matters? It would be well to bear in mind that there are a number of substances the efficacy of which is increased by admixture, and one or two the action of which is qualified by combination. The aperient effect of certain drugs is augmented by the addition of henbane, belladonna and nux vomica. The nausea and depression following the use of morphia, as we before mentioned, are almost entirely obviated by combining it with hydrate of chloral. Opium in very small quantities prevents the griping of many cathartic remedies, without lessening their potency. In giving large doses of calomel, salivation is prevented if this mineral be mixed with bicarbonate of soda or chlorate of potash. This last combination does not appear to be a chemical one, or scientific, at first glance, but I am assured by capable chemists that no bad effects result from its use, and that a chloride of mercury is not really formed. Iodide of potassium supplements treatment by mercury, and in those cases where there exists a lingering of the poison it appears most beneficial. The emetic effects of tartar of antimony are concentrated by its admixture with opium. It was formerly largely given in this way in cases of delirium tremens, and is still used in Ireland in protracted labor due to rigidity of the os uteri. Trituration, too, may be mentioned as a means to increase the power of medicine. This is a means very little understood. There are many other combinations modifying the action of medicinal agents, but they are no doubt familiar to you all. Our only purpose at this time is to call the notice of the profession to the efficacy of small doses of certain unmistakable remedies in daily use, and to invoke a greater watchfulness in the administration of drugs, as well as closer attention to their effects when given in large or small quantities.

DEDUCTIONS.

1. That the true physiological effect of remedies may best be obtained by the administration of small doses frequently repeated.
2. That medicines thus given are accumulative in their operation.
3. That the effect of remedies is greatly increased by combination, the manner of preparation, the time and mode of administration, etc.
4. That large doses of medicine frequently act as irritants; that they produce an abnormal state of the blood, as is evidenced by such conditions as narcotism, alcoholism, iodism, ergotism, bromidism, etc.
5. That more special attention should be given at the bedside to the influence of remedial agents, to the end that a greater certainty may be exercised in their prescription.

TREATMENT OF DISORDERS ARISING FROM PROLONGED MENTAL DEPRESSION, ETC.

By J. H. O'REILLY, M.D., of the United States Marine Hospital Service, Louisville.

THAT a prolonged continuance of depressing mental emotions is productive of numerous disorders, both real and imaginary, is a fact in medicine, thoroughly established. Conspicuously common among the affections arising from this source, which may be arranged under the former title, are sleeplessness, vertigo, neuralgia, and general nervous prostration, palpitation of the heart, and other disturbances of the circulatory apparatus, gastralgia, the different varieties of dyspepsia, and obstinate and annoying constipation. Under the head of imaginary may be collected those numerous and vaguely defined complaints everywhere recognized and denominated as hypochondriacal.

The people of the United States are just passing through a condition of financial depression which is unparalleled for duration and for the universality of distress thereby occasioned. As a consequence of this state of affairs, the diseases of which mention has just been made are observed to occur with remarkably increased frequency. Taking advantage of the seemingly golden opportunity thus offered to augment their sales, and evidently under the delusion that they were conferring an inestimable boon upon suffering humanity, the manufacturers of medicines have flooded the country with "hundreds upon hundreds" of alleged "unfailing" and truly "agreeable preparations." Notwithstanding, however, this very commendable enterprise on the part of the manufacturers, it is the generally expressed opinion of physicians that, from the almost interminable list of "new remedies" recently presented to the profession, it would be impossible to select a dozen medicines whose actions, after being thoroughly tested, have not failed to meet the expectations of those by whom they were administered.

Practitioners, in endeavoring to account for the occurrence of this anomaly, have advanced a multitude of theories, many altogether unreasonable, and not a few perfectly ridiculous. One gentleman ascribes the trouble to the "fluid extracts," many of which are rendered entirely inefficacious by the excessive heat employed during the process of their manufacture. He says, "I maintain that where much heat is used (referring to fluid extracts), especially with products of a volatile character, it is possible to dissipate the valuable part of the preparation and give an inert and worthless drug." Another physician attributes the irregularity to the improper preparation and gross adulteration of the new remedies in general. It will be remarked, however, on the one hand, that the "fluid extract" is not the only preparation by which we are so constantly disappointed, and on the other it is yet to be established that the new medicines are

not equally as scientifically and carefully manufactured, and quite as little adulterated, as any that were employed previously to their introduction. While each of these gentlemen, therefore, has directed attention to a possible element in the production of this most unsatisfactory condition of things, both have failed, either from contracted observation or fallacious reasoning, to discover the great and most obvious cause of the difficulty.

As already inferred, the troubles whose increased frequency of occurrence has been the chief instrument in bringing about the introduction of these warranted panaceas, originate from prolonged worry, overstraining and depression of the mental faculties, and it is in this class of disorders, if anywhere, that the effects are to be gotten rid of by the removal of the cause. Now, these remedies, from their very nature, can be applied only to the palpable results, instead of to the original source of disturbance, and it is on this account that benefit so rarely succeeds their administration. It must be remembered, in the management of these affections, that relief comes only subsequently to the advent of complete mental relaxation and diversion. The measures to be adopted for the induction of this latter condition are both psychological and hygienic in their character. Sleep, and plenty of it, must be procured under any circumstances. Bathing is scarcely less beneficial than rest, when regularly and judiciously employed. As a means of relief, in many instances, traveling, by reason of the constant vicissitudes and excitement with which it is attended, is to be highly commended. The same may be remarked in connection with field and aquatic sports, and out-door exercises of every description. Where the occupation of the patient renders an absence from the city difficult or impossible, nothing will prove more highly efficacious than the healthy and pleasant recreation provided for by a well-regulated gymnasium. The mental amusement and distraction attendant upon gardening, pisciculture, and the raising of pets, is especially useful where the subject is a female, or a male of delicate constitution. Minute specifications concerning the nature and employment of these measures are altogether without value, on account of the numberless differences in the histories of the cases which present themselves for treatment. To the intelligent discrimination of the physician in attendance must be left the selection of such as are appropriate to the peculiar disposition and temperament of the individual under his supervision. —*Med. and Surg. Reporter.*

THE METRIC SYSTEM.

A VERSION FOR THE KINDERGARTEN.

By A METRICAL MANIAC.

I.

HURRAH for the Meter, the jolly new Meter;
Not the long—nor the short—nor the common old teter.
But particlar for you and for me;
'Tis the ten-millionth part from the pole to th' equator,
With it you can measure a township or 'tater,
A kingdom, a brig, or a flea.

II.

D'ye see this 'ere cube of the tenth of a meter?
That's a liter, to gauge how much drink, by St. Peter,
You can stow in your vast lower hold;
But the Gram is the boy to hit up the doctors,
And bother the fogies, and gargle concocters,
And make them to blunder and scold.

III.

O! Let them go hang with their ounces and scruples,
Tell the graybeards to "cave" and come down to be pupils,
Like Ned, Henry, Tom and your Jack;
There's nothing so easy as to learn this nice table;
With Deka and Hecto and Kilo you're able
To bounce it all off in a crack.

IV.

The Greek words increase, like Greek brats on the Shannon,
But the Latin decrease, as shot from a cannon
Looks smaller the further it goes:
Haste! Dekagram, Hectogram, Kilogram, heavy
With Decigram, Centigram, Milligram's levy,
And GILD the bald scalps of your foes.

V.

Play you're making out bills when you're writing prescriptions,
And your cramp hieroglyphics of th' ancient Egyptians
Are improved into dollars and cents;
Now what is a gram, or what are the values
Of the devilish and blackguardly weights that we all use
Annoying the Metrical gents?

VI.

A grain's one six-hundredth of our new Gram, boys;
A Gram and a third will make, sure I am, boys,
Your old Scruple, so base and so mean;
Four Grams make a drachm, or at least very nearly,
Thirty-two will fill up the ounce quite as clearly;
Was anything 'cuter e'er seen?

VII.

Then weigh eighty Grams of the best old Jamaica
With a hundred and twenty of water and shake a-
Bout one Gram of nutmeg in clean;
Squeeze in fifteen grams next of lemon-juice pure,
Shake with ice, and you compound a mixture that's sure
A babe from it's mother to wean.

VIII.

And we'll drink to the system, the new Metric System.
Who won't take it kindly, be sure we'll assist him
By sarcasm, by nudge and by gibe.
If some unlucky foggy with this new appliance
Shall a babe or two poison, you know—it is science.
Continue to weigh and prescribe.

IX.

Drink again to our system—our superior system;
For each who will use it, we'll rally and twist him
A garland of camomile flowers;
And when every nation has learned this notation,
Crime shall vanish, and all through creation
A first-class millennium be ours.

—*Hospital Gazette.*

HARD RUBBER APPLIANCE FOR CONGENITAL CLEFT PALATE.

By THOMAS BRIAN GUNNING, New York.

WE give selections from Dr. Gunning's article in the New York *Medical Journal* of this month, which will place his improved treatment of "Cleft Palate" clearly before our readers:

"Alexander Petronius, in his work entitled 'De Margo Gallico,' and Ambrose Paré, in his book on surgery, prove

Fig. 1.

that efforts to relieve those suffering from defective palate, by applying obturators, were made over three centuries ago, and the records of the last fifty years alone show that the endeavors to supplement the congenital cleft palate have resulted in the invention of mechanical appliances which in number and variety are very remarkable; yet the 'Report of the International Exhibition of 1876,' in referring to the one now submitted, says: 'This contrivance is a very marked improvement over all previous appliances to this distressing malformation.' Now, that this simple remedy was not devised earlier is owing to mistaken views as to the movement of the muscles of the pharynx and palate, both in perfect and malformed conditions, and this notwithstanding the investigation and study of these parts by the most distinguished physiologists and surgeons."

Dr. Gunning's remarks in correction of mistaken opinions respecting the action of the muscles in deglutition, speech, etc., close as follows:

"The form of the hard palate is such that the tongue can fit it around the inside of the teeth, as in the consonant *t*. The back of the tongue also fits against the soft palate and uvula exactly, and this closure can be maintained while the upper part of the soft palate shuts off the posterior nares. This is easily tested by pronouncing the consonant *k*, in which both the nose and mouth are shut off from the larynx, until the tongue leaves the palate to allow the vowel sound to come out, when only the passage to the nose is kept shut. This double closure is made even in *kee*, in which sound the contact for *k* is on the hard palate, instead of being back on the soft palate as in *koo*. The point of the tongue goes up in *t*, the back of the tongue in *k*, and the lower lip also goes up to form *p*, the upper lip and the hard palate being passive, and the soft palate nearly so, outside of its great function in respect to voice, which is to shut off the nose cavity in all sounds of speech and song except those containing *m* or *n*. At rest, the velum leaves the passage from the nose to the larynx open."

Fig. 2.

After showing that observation of the malformed palate confirms his views, he says:

"In 1864 I had become convinced that the *superior constrictor* was incapable of any action which could prevent the use of a rigid appliance to supplement the cleft soft palate, and to the present time in no case has the hard rubber palate failed to keep its place, to give entire satisfaction, and to improve the speech in a remarkable degree."

He sums up, before giving the illustrations, as follows: "Therefore, in brief, in view of the foregoing propositions: There being no forward action whatever of the superior constrictor muscles, a rigid plate can be worn without intermission, not only in comfort, but with improved condition of the mucous membrane, which is covered in, and of the general health, the nose being as free for breathing as in a normal condition of the parts; while the plate also enables the wearer to utilize the muscles of the cleft velum. The plate is easily made, and being of hard rubber does not deteriorate in the mouth. It is not supported by any part of the cleft, and may thus be worn from early childhood without injury to the parts, in fact its support may even lessen the cleft."

"The plate, which is held up by the teeth against the hard roof of the mouth, extends up into the cleft and thence to the back of the pharynx near the tubercle of the atlas, the end being rounded to allow the sides of the pharynx to close in during the act of swallowing. This extension into the cleft being spread out over the soft parts on each side, the ununited muscles draw up against it and close off the nasal cavity. The vowel sounds are therefore preserved from the resonance of the nose by the natural action of the muscles, while the nasal sounds are used when necessary, and the tongue is able to form all the lingual consonants, the stiffness of the hard rubber affording the best possible substitute

for the muscular firmness of the natural soft palate. To apply this palate a simple impression of the hard palate and teeth, as is usually taken for the setting of artificial teeth, is quite sufficient, the extension into the soft palate being made by fitting the gutta percha pattern to the parts, without subjecting the patient to the annoyance of obtaining a plaster impression of these sensitive and mobile organs. This palate is consequently so simple that any accomplished dentist can apply it, and the patient is therefore comparatively independent."

"Early use of this artificial palate prevents unnatural action of the tongue, such as attempts to close the cleft with the tongue when the latter should be free to act in articulation, whether in speaking or singing."

"Fig. 1 gives the upper side view of an appliance for a case in which the cleft passes through the whole length of the soft palate, but does not reach the front teeth."

"Fig. 2 gives the lower front view of the plate shown in Fig. 1; when worn, the narrow part is covered on each side by the cleft soft palate, as in Fig. 4."

"Fig. 3 was taken from the cast of a large cleft through both the hard and soft palate, in a patient twenty years old. The cleft in her lip had been closed in infancy; and attempts were made to close the soft palate after the cast was taken, but the parts did not unite. The case is peculiar in the absence of the bicuspid teeth and the central incisor, there being only an irregularly formed tooth on the mesial side of the canine instead of two incisors."

Fig. 3.

"Fig. 4 shows the hard rubber appliance as adjusted to remedy the deformity exhibited in Fig. 3, after the wisdom-teeth and the right central had been lost through decay and the malformed tooth removed."

"The cut was made from an impression of the plate *in situ* after it had been worn more than four years, day and night."

We understand that this was three years ago; the palate is still in use, and so indispensable to the patient that she will not say a word without it."

Figs. 1 and 2 represent a palate which has been worn steadily since November, 1869. For six months previous the patient persevered in attempts to use a palate made in three pieces, two of which were of soft rubber. It, however, proved useless, in fact unbearable. The flexibility of the soft rubber unfits it for use, for as the sides of the cleft soft palate draw up in the vowel-sounds they find nothing firm to close against, and frequently get above the yielding edges of the rubber; again, the tongue cannot form the guttural consonants *k* and *c*, as the soft rubber goes up out of reach; while in eating, the food often gets above the velum, and makes it more difficult to swallow than without any appliance. But all this is remedied by the *hard* rubber palate."

Dr. Gunning's appliance to supplement the congenital cleft palate, and also his methods of treating the *acquired* injury, "fracture of the jaw," were considered so important

Fig. 4.

that they were recorded at length in the Surgical Report of the United States Centennial Commission, with remarks upon his successful treatment of the Hon. Wm. H. Seward. Many of our readers will remember that Dr. Gunning was called to Washington, at the time of President Lincoln's death, to attend the Secretary of State, whose condition was also critical, through the attempt to assassinate him."