The relation of mouth germs to arthritis deformans seems proved, hence eradication of the source of infection before the joints are affected should be the preventive treatment of today. To allow infection in the mouth to persist until this painful and crippling disease develops is inexcusable.

For nearly two years now, at a public tuberculosis institution of which I am chairman of the medical board, we have examined the mouths, corrected the teeth and removed sources of infection of every patient who entered the institution, and owing to this preventive treatment we have had less tonsillitis, fewer sore throats, less indigestion, and less influenza and colds than we had before we began these mouth investigations.

I think that both dentists and physicians have been very slow in discovering the harm done to patients by crowns and bridges, by leaving infected teeth in place, and by improperly filled teeth. Physicians do not pay proper attention to, and many times do not even look into, the mouths of their patients. I look back with chagrin and shame as I think of the probable cause of the chronic invalidism of some of my patients of years ago. But with this admission of neglect in the past, I deplore the present necessity of being compelled to fight with both the patient and his or her dentist for the removal of infected foci in the mouth. The dentist frequently will not cooperate. He naturally dislikes to remove his own fine handiwork. Hence, I repeat, when a bad tooth comes out, or a dirty crown comes off, let the patient, or, if he is anesthetized, his nearest relative, smell of it. This is an educational propaganda.

CONCLUSIONS

1. Most unexpected tolerance to pyorrhea alveolaris and to tooth infection is found.
2. Chronic invalidism may be caused by mouth infections.
3. The blood pressure may be raised or lowered by mouth infections.
4. The thyroid gland is frequently enlarged, and may hypersecrete or hyposecrete, in these infections.
5. Serious disturbances of the blood, heart, kidneys, stomach, intestines and joints are frequent from mouth infections.
6. Glycosuria can be, and perhaps true diabetes mellitus may be, caused by mouth infections.
7. Serious distant focal infections may occur from mouth infection.
8. Serious brain and nerve disturbances, as well as neuritis, may occur from mouth infection.
9. Ulcer of the stomach, pyelitis, appendicitis and chronic colitis may be caused by pyorrhea alveolaris and mouth infection.
10. Pneumonia, especially that which follows influenza, may frequently be caused by pneumococci long carried in the patient's mouth.
11. No treatment of these conditions will be of any avail until the mouth is made clean.
12. Stock or autogenous vaccines are not very promising as to their therapeutic value, but in obstinate cases they should be tried. Therefore, it is generally well to grow a culture from the infection in the mouths of these patients, that autogenous vaccines may be made and used, if desired.
13. One should be very careful not to promise a cure of a distant condition, although that condition

was caused by the mouth infection. However, many brilliant cures are caused by surgical eradication of infected areas. The patient should always be told that the surgical removal of the infected area in the mouth does not remove the germ localized in distant parts of the body, nor does it immediately cure an inflammation caused by these germs in a distant part, nor will it restore degenerated tissue, but it will remove the primary source of infection.

14. It should be urged that any fresh lesion of the mucous membranes of the mouth is a source of danger, much as is a lesion of the skin. The efficiency of the integument in warding off disease germs has long been recognized. It should be recognized that fresh cuts, abrasions, and blistering of the mucous membrane of the mouth with iodine, or other strong escharotics, offer the opportunity for the absorption of germs that may be freshly received into the mouth, and more especially of germs already in the mouth.

MIGRAINE AND CHRONIC INTESTINAL STASIS

THEIR RELATIONSHIP AND TREATMENT

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By migraine is meant a condition characterized by severe attacks of headache that occur at varying intervals, with periods of freedom between the attacks. The headache is usually followed by vomiting, either of plain gastric fluids or contents, or of bile, "bilious vomiting." After vomiting, the patient usually feels better, the attack gradually subsides, and there is an interval of freedom from the trouble for a month or two, or it may be for only a week.

The term "intestinal stasis" was first applied by Lane to a condition in which there is a delay in the onward movement of the intestinal contents, accompanied by symptoms of a neurotic type. Formerly, instead of intestinal stasis we spoke of habitual constipation. In constipation we find occasionally a great number of nervous symptoms — dizziness, lack of concentration of the mind, insomnia, etc. This combination of nervous symptoms and delay in the onward movement of the intestinal contents and action of the liver is considered by Lane as "intestinal stasis"; by others, the same picture is designated as "constipation with nervous phenomena."

SYMPTOMS

In migraine it is characteristic that the headache comes on suddenly, in the midst of perfect health, although there may be a premonitory stage of short duration. Sometimes the headache is followed by a defect of vision; some persons have a glimmering light in one eye, or they cannot see well with one eye; the headache is usually in one part of the head. That is why it is called *migraine*, from the Greek *hemicrania* (on one side of the head). The headache is usually quite severe, so that the patient cannot work and may have to go to bed, and with it there are disturbances in the upper part of the abdomen, followed by nausea and vomiting, and if there is nothing in the stomach then ultimately bile comes up. After vomiting and purging, the patient feels relieved, and there may be a period of freedom for quite a while.

Patients with migraine may be in good condition and apparently perfectly well; or they may belong to a group which suffers from enteroptosis and weakness, and are thin, anemic individuals. They do not feel well between the attacks, they cannot work much, their appetite is not good, and they are constipated; but these complaints are of minor degree and do not incapacitate them. Among the abnormal conditions may be some disturbances of the vision, or disturbances of the abdomen or of the genito-urinary organs.

In chronic intestinal stasis or simple constipation with nervous phenomena, the bowels do not move well without resort to some aid. Besides the constipation, the patients also complain of a variety of symptoms, sleeplessness, headache, etc. The headaches are not severe like those of migraine, but are mild and come on almost daily, particularly in the morning. Then there may be slight dizziness, and the patient cannot concentrate his mind and cannot do the same amount of work as formerly. His appetite is poor; sometimes there is nausea, and sometimes there is a fear of going out alone or of going to church. These nervous phenomena may be exaggerated; sometimes the constipation is associated with melancholia. That is not an infrequent combination. Constipation exists also in a high degree in the insane.

In regard to the connection of these conditions, some physicians say that constipation is at the root of these troubles, causing even insanity. I myself do not believe this, but rather think that commonly the reverse is true, namely, that persons who are nervously upset and are insane have their constipation increased by their nervous condition. I once saw an insane patient with an immense very hard tumor in his abdomen that could not be differentiated from a large neoplasm. When it was learned that the bowels had not moved for a week or two, it was easy to make the diagnosis that it was a fecal mass. He was given a strong cathartic, the bowel was washed out for a number of days, and the tumor disappeared; but the patient's insanity was not cured. Although the constipation was relieved, the insanity persisted for a whole year, when the mental symptoms cleared up.

ETIOLOGY AND TREATMENT

French writers have given us the theory of auto-intoxication. Bouchard was the first to advance the theory that poisons form in the body which give rise to these disturbances. Any organ which is at work creates waste products which are, so to say, deleterious to the system, provided they stay there. Usually the system eliminates them. If one does manual work, the muscles use up some of their material and produce also waste products. Naturally, these waste products are removed, being eliminated during the period of rest, so that no disturbances originate. It is the same way with all the organs of the body. In the brain, for instance, reading or writing creates waste products, just as in any machinery; there is a by-product that has to be eliminated. Our organs are so arranged that the body normally is easily rid of these waste products, and no symptoms arise.

If we go a step farther we can see that if the required period of rest is not given, if the work is kept up too long, the waste products accumulate in a greater degree, and they are not eliminated in a complete manner. For instance, if a person can work six or eight hours every day and his organism is so arranged that he can rest in nine or ten hours, and he

then works for twelve hours a day and does not get the required rest period, the system does not get the needed rest, and disturbances arise.

These disturbances may be considered as the defensive mechanism of the organism. To apply this theory to migraine: If there is a mental strain going on in some way, the patient doing too much work, reading or dancing, or taking part in too many social happenings and not sleeping or resting enough, the brain does not get sufficient rest and does not have time to regain its normal condition. Some waste products accumulate, and every day there is an increase in their amount, so that ultimately there is a catastrophe. The body tries to create something that will compel the organism to rearrange matters, and there is a spasm of the blood vessels on one side of the brain which makes itself felt as a hemicrania. The patient has a headache due to that spasm and has to lie down and rest more; during this time the restoration of function of the brain is completed in a normal way, and elimination takes place. The headache is then relieved; a relaxation of the blood vessels takes place and reestablishment of equilibrium ensues.

Elimination can be helped by emptying the bowel. The eliminative organs are the kidneys, skin, lungs, liver and digestive tract. The waste products are first taken up in the blood. How does the brain, for instance, get rid of the accumulated waste that must first be taken up by the blood? The veins do their share first. Part of that blood goes to the liver through the arteria hepatica. I do not speak here of the portal vein. The latter lies there as the barrier to prevent anything from passing through into the blood which comes directly from the digestive tract. But outside of that the other blood—only a part—goes to the liver. That brings something for the liver to work on; but the digestive tract has also the power to eliminate. Now, if the patient takes a cathartic or vomits, a part of the accumulated waste products is eliminated. The gastric juice is not only a secretion but also an excretion; it is excreted through the stomach. Sometimes urea can be excreted through the stomach, and still more through the liver. The bile brings down the excretory substances of the liver and empties them into the intestinal tract. If a patient has a migraine and we give him calomel, he has a greater flow of bile and the elimination is increased, and vomiting and purging clear out the system.

In the autointoxication theory in intestinal stasis, it is quite different. Fecal matter contains decomposed material and innumerable bacteria. The idea that poisonous substances reach the organism from this source is at first thought plausible. But normally the digestive tract (including the colon) does not take up any poisonous material. The mechanism of the system is so arranged that its work shall be kept up, and the colon is so constructed that the fecal matter can be discharged without much difficulty. Many physicians are imbued with the idea that if the intestinal contents remain too long in the system they will give out to the system poisonous substances which create all the symptoms before mentioned, and that we have to deal with an intestinal autointoxication.

If this theory can be worked out without awakening too much fear in the mind of the patient, it will not do any harm; but if it is exaggerated, great harm may be done. This point must be emphasized, for it is of importance. Lane said that if there is some delay in the motion of the contents of the bowel—and this

is especially true in cases of enteroptosis when there is a prolapse of the colon and an irregularity in the position of the colon, which creates an autointoxication — this is the cause of the troubles associated with constipation, as sleeplessness and headaches, and also of many other ailments, such as chronic rheumatism and gout.

This theory has been overestimated, and has taken such root in the minds of some physicians that if they see a patient who is constipated they think he must be told of it. "Why, you cannot live that way, with poisoning going on in your system all the time; if that keeps up, all will come to an end." The patient goes home and worries, and doesn't know what to do. He tries to do exactly what the physician tells him. He eats no proteins, but does not feel much better. He comes back to the physician, who says: "Your trouble is in the colon; the colon is not exactly right. It is too long. Instead of going in a more or less circular way, it forms angulations and drops down, and that is wrong. There is a delay there, and that is where the trouble lies." If the patient does not get better within two or three weeks of treatment, operation is suggested for the purpose of shortening the colon, cutting out part, or perhaps the whole of it, performing an ileosigmoidostomy or a colectomy.

Were this theory really correct and could we prove it, we might at least try such a procedure; but in reality such patients feel much worse after operation. A great many are made worse, and some have died as a result of it. In order to demonstrate that we really have to do with an autointoxication, we ought to be able to produce the poison by experiment and then to inject it into animals and show that that poison causes these symptoms, not in one or two instances, but in every instance. If that could be proved, we might speak of it; but it has not been proved, and much harm has been done by teaching it, in making people afraid of themselves, making them afraid to eat and afraid of their digestive tracts, especially of the large bowel which, according to their minds, is a place of poisoning.

It is just the reverse. The colon is our best friend. Instead of being a place of poisoning it is a place in which things can be kept without harm and later on eliminated. It serves a very useful purpose. It can take good care of the excrement and can work it up better. If we lose the colon, we are much worse off than with it. I speak from experience, for such persons come to me almost every day worrying about their large bowel.

This is all wrong. Unless there is some organic disease in the bowel which gives rise to ulceration, for instance, in such a way that it is exposed to the absorption of fecal matter — and such instances are very rare — the mere presence of fecal matter will do no harm, for so long as the mucous membranes are intact, no matter what the shape or position of the colon — big or little, up or down — no surgical intervention will be required. The latter will be reserved for organic diseases (strictures, or partial stenosis by bands, etc.).

In regard to the connection between the nervous phenomena and constipation: In a great many cases, the nervous phenomena do not originate from the constipation. This has been proved by Dunin of Russian Poland. Two important points can be brought out to demonstrate this. Constipation can be established for a number of days by giving a patient opium, and yet

he will be perfectly well, showing that the fecal matter does him no harm. If a patient with these nervous phenomena — sleeplessness, distress, etc. — is given a nerve remedy, say 15 grains of bromid, a movement of the bowels will at times take place without a cathartic. This will not be true in all instances, but will in a great many, showing that the primary factor in the condition is the nervous state of which the constipation is the consequence.

It is important to know that fear and constant anxiety about having a movement is bad for the patient; it makes him worse. The more he is frightened and made anxious about having the movement, the worse is the constipation; the fear and anxiety exert an inhibitory influence on the peristalsis.

TREATMENT

In cases of migraine, we first have to look into the condition of the system and find out any existing faults, such as astigmatism, which should be corrected by proper glasses; enteroptosis, by giving the patient a bandage; chlorosis, anemia, by building up the system and getting the patient into a normal state. For, if the organism is below par, anomalies will develop much more quickly, and the migraine will come on more readily than if the body is in good condition. The first thing to be done is to try to adjust any existing anomalies of the body.

During the attack, the desired rest must be secured for the patient; if possible, in bed. No nourishment should be taken, or only very little liquid food; and a mild aperient or a saline enema should be given. If these measures are not sufficient, citrated caffeine, 2 grains, in conjunction with pyramidon, 5 grains, may be administered twice daily. In rare instances, codein or morphin may be required. All of these remedies act well and should be given as needed. Calomel is good and can be administered when indicated, and injections may be given to wash out the bowel. In a day or two the migraine is over and the patient returns to normal, and then we decide about other measures to adopt to prevent, if possible, the return of the migraine. If we succeed in eliminating all the causative factors, the migraine will not reappear; but if we cannot do that we can at least cause the attacks to be milder and less frequent.

In habitual constipation, or intestinal stasis with these nervous phenomena, it is of first importance to reassure the patient by telling him that in case he is constipated no harm has been done to the system. We must take away the fear of poisoning. The patient should be told to eat, but not to overwork, and his bowels will move all right; also to go to the toilet every day at the same hour, in order to reestablish the habit that has been lost.

In many patients constipation is due to a one-sided diet, and they have to be taught a proper diet. They should be urged to eat plenty of bread and vegetables and fruit, and plenty of salads. The more indigestible food these patients take, the better. It increases the activity of the digestion and augments the peristalsis. If they are given food that will digest readily there is too little work for the bowel to do. Many patients take too little water. These should be encouraged to drink more water, since drinking water between meals increases the action of the bowels.

If all this has been done and it is not enough, the question arises whether we are justified in giving the

patient cathartics. Mild aperients are rational. If the patient does not do well enough with dietetic measures, we must resort to other means. There is no harm in them; also sedatives, as already mentioned, should be given. As mild cathartics, I would consider cascara sagrada or tincture of rhubarb, 15 grains twice a day; also small amounts of licorice powder. These remedies can also be employed in combination with agar-agar. Agar alone is sometimes sufficient. It is a substance which takes up fluid and does not give it up readily, but retains some of it. Constipation is sometimes due to the stool being too dry. The water has been taken away by the digestive tract, the excrement is too dry, and the peristalsis cannot push it along easily. Therefore, if agar is given, which is not digested in passing through the tract, it takes up fluid and lubricates the fecal matter and gives it a more moist character and appearance. It is helpful to the bowel and eases the movements, so that it can be given in large quantities. But often this is not enough, and the combination of a mild cathartic remedy with it is beneficial. The idea of using the cathartic remedy in this way is that instead of being absorbed in the stomach it is carried along farther in the tract. The agar has the advantage that if the remedy is incorporated with it, the remedy does not act too quickly but emerges slowly along the entire digestive tract by the process of osmosis. That is why these mild cathartic remedies incorporated with the agar act so much better than either alone. In this way one can give phenolphthalein-agar or rhubarb-agar with great benefit. The principle with all these remedies is that instead of increasing the quantity the patient should be told to take a little less gradually from day to day or week to week, so that ultimately he may not need to take anything; but if the patient does not succeed in this, there is no harm in taking a little once in a while.

No one should be operated on for these conditions unless there is some organic lesion present. If there is a stricture of the colon there are sometimes fever and vomiting, and an operation may be required; but not with these symptoms of plain, habitual constipation. In such cases an operation is not justified. I well know that my remarks conflict with the views of others. These are my views, and I assure my colleagues that my experience leads me to state that they can relieve without operation their patients suffering from constipation.

In treating patients with habitual constipation, saline enemas may be used, and olive oil injections may be given. The latter is especially good in spastic constipation, when the fecal matter is hard and dry. An injection of from 5 to 7 ounces of olive oil may be given, and left in the bowel over night. This treatment may be continued for two or three weeks every night, and then it may be given every other night for a few weeks. That is apt to cure the patient. Klempner has given water instead of oil with good results, but the oil is better. It is not necessary to give these injections too high up. It is well to have the patient lie first on the left side, and during the night it will flow in. The olive oil should be used at blood temperature.

All these measures are more or less reassuring to the patient, and act subjectively as well as directly.

Liquid petrolatum is also good, but in many cases in which it does not act, agar gives a satisfactory result.

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THE INDUSTRIAL DISPENSARY IN PREVENTIVE MEDICINE *

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Civilization must progress by means of ideas and ideals, and as a protest against any existing order of affairs an idea must take root in some one's mind. For the acceptance of an idea, if it is to be useful, the public must realize its necessity, since necessity is the motive power of all progress. We have repeatedly listened to statistics indicating the cost of waste produced by preventable illness, but now, as never before, we realize the importance this question has for our nation. Man power conserved now, both in civilian and military life, assumes such an important place in our preparedness schemes that all agencies must be employed for the conservation and protection of our people.

We have never been satisfied with our preventive medical work, and never can we be until we enlist new forces for the cause. We have placed our faith largely in police power, and have educated our people in spite of themselves to mass for community protection. We have never, through our spasmodic periods of medical education, enlisted the cooperation of the individual for his own protection. Witness the fact that, in spite of police power, our city streets are covered with salvia, and remember that it is so because individuals have not recognized the danger. Remember the work accomplished by our campaign against tuberculosis, and do not forget that in most communities many do not receive an early diagnosis because of (1) inability to purchase the services of a good physician, and (2) ignorance of the necessity for medical care.

How many cities or states can boast of having set aside beds enough to care for their tuberculous patients? How many can show me that they do not harbor tenements that are breeding places for tuberculosis? How many boards of health will tell you that all the physicians are making prompt and accurate returns of their preventable cases? Individuals must be medically educated. They must develop a medical conscience before greater results can be obtained. We have discussed the increase in heart and kidney lesions, and pointed out their early mortality, which we say represents the wear and tear of life. In any given industry do we know what a physiologic day's work is or have we arrived at the length and amount of a turn at labor by noting what the average can stand for a given space of time.

Within a very few years we have seen our preventive work take a turn for the better. In regard to children, we have recognized the fact that education is worth little without health. We know that many parents either through ignorance or wilfulness send children to school who are suffering from contagious diseases that are dangerous to others; hence the rise of school inspection, with all its benefits. We learned soon that many physical handicaps could be removed and before long parents were willing to aid in the medical school work. We presently found that some children must be placed in a selective school environment, lest their deficient mentality should ruin others. We taught our educators that children could have

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