these cases. Alcoholism, insanity and tuberculosis comprise the factors of dissimilar heredity; alcoholism in the parent being the cause in 15 per cent.; tuberculosis in 14 per cent., and insanity in 8 per cent. in males and 12 per cent. in females, giving a grand total of over 55 per cent. due to heredity. The causes that come under stress are almost legion and entirely too numerous to call up at this time.

We treat each patient, as far as possible, along four lines: medical, dietetic, surgical and moral, always endeavoring to individualize the treatment as far as possible, and you can never get good results in the treatment of this very obstinate malady until the individual is singled out and treated as well as the disease; and then all forms of treatment must be correct and carried out with the most scrupulous regard to details. Do not rely too much on the bromids; they have some value, it is true; they help some in some cases, but alone I do not believe they have the power to cure. Of late new remedies have come into use, such as bromipin and dormiol, that possess the good features of the bromid salts without any of their bad ones; bromipin, in our opinion, being especially valuable when given in the form of an emulsion.

I have but little to say about the surgical treatment of epilepsy. We have collected the records of scores of cases of operation on the brain, and in none of them have the beneficial effects been permanent. I recall the case of a woman, about 38 years of age, who had an impervious uterus up to the age of 37. She was operated on, the uterus and appendages removed, and she never had a convulsion afterward.

I believe that in every case of genuine epilepsy of any duration the mind is always affected. The institutional treatment of epilepsy is, to my mind, the most valuable method, because it is only by this method that you can absolutely control the patient in all his habits, and you have to do that if you get good results. We should have a record of every attack, with the date and hour that it occurred; of the character of the attack and whether it was followed by loss of consciousness or mental disturbance; how long each stage of the attack lasted, and the point of origin of the convulsions. Our records are complete. While we have not devised a diagram such as Dr. Moyer mentions, I want to speak a word in favor of the Doctor's system of keeping his records. I don't think we ought to be too pessimistic about the pathology of epilepsy. It is only during the past eight or ten years—a brief time in science—that we have been doing work in this direction, and I think there is a great field before us. We ought not to say that nothing can be done for epilepsy, for I know much good can be accomplished.

Dr. Tomlinson spoke about the "epileptic equivalent," and I think the whole thing might be summed up like this: the man who is an epileptic and is in a condition of automatism is not in a condition to receive new impressions; his mind is like a camera plate that has been exposed—it is dead to new impressions. He can only act on impressions, on knowledge previously acquired, but can not receive new ones. This condition is important from the standpoint of medical jurisprudence.

Dr. J. H. McBRIDE, Los Angeles, Cal.—Dr. Spratling said in the early part of his paper that about 8 per cent. of epileptics become insane. In another place I understood him to say that 16 per cent. of genuine epileptics became insane. It would seem, therefore, that much depends on what you include in the term genuine epilepsy. My own experience is that all habitual epileptics suffer some mental deterioration, and while not all of them can properly be called lunatics, neither ought they to be spoken of as sound in mind. We lay too much stress on the fit; the epileptic is usually in a morbid condition in the intervals of the fit.

Dr. SPRTLING—I take it that in the first case the epilepsy was due to what we call a distal or reflex cause. The chances of cure in such cases are always better than when the cause is proximal or entirely within the brain. I did not say that 8 per cent. of all epileptics become insane, nor do I regard any epileptics as being perfectly sound in mind; and after that it is only a question of degree. Out of 1,200 cases studied at the Craig Colony 15 to 20 per cent. were found to be subjects for permanent hospital or asylum treatment, while a very much larger per cent. were feeble in mind to some degree.

SYPHILIS OF THE LARYNX.*

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Syphilis of the larynx is the local manifestation in the larynx of constitutional lues. It is observed in all its different stages and may be either hereditary or acquired. It is classed as (a) the primary lesion, (b) the secondary, including the erythema, mucous patch and superficial ulcer, and (c) the tertiary, including the gumma, deep ulceration, perichondritis and stenosis. It is fortunately quite a rare manifestation in this disease, occurring in 2.9 per cent. of cases as observed by Lewin, 2.4 per cent. by Schrotter, 3.4 per cent. by McKenzie, 2.8 per cent. by Engelsted. These observations are not altogether unanimous, however, as some authors put the per cent. as high as 15. Its occurrence in the pharynx is given by these authors as 10 per cent., and in the nose as 2.8 per cent. The London Throat Hospital reports out of 10,000 cases of this disease, 308 affections of the larynx and 834 of the pharynx. Most of the cases cited were from 30 to 50 years of age. This is probably due to the fact that the individuals are more prone to infection after the age of 20 and seldom after the age of 50. Up to the present time but one instance of primary lesion has been observed, as stated in a case related by Moure,¹ in which he observed a chancre on the free edge of the epiglottis. When the disease is hereditary it occurs either in the early months of life or about adolescence. In the former we have the secondary and in the latter we encounter the tertiary manifestations of the disease.

SYMPTOMS.

There are mild cases who complain only of an inclination to clear the throat, and from this we have all grades of symptoms to severe dysphonia, aphonia or dyspnea, which latter may increase ultimately to such an extent as to require the performance of a tracheotomy. Cough may be present in the early stages, but rare in the latter ones. The vocal function is impaired, and while at the commencement of the attack it amounts only to hoarseness, later it may pass to complete aphonia. Swallowing becomes almost impossible and the absence of pain when not attempting to swallow is most characteristic. The stage of erythema may be confounded with catarrhal laryngitis unless we look for the secondary manifestations accompanying it and the absence of the great amount of pain characterizing the catarrhal laryngitis. Ordinary laryngitis should be considered suspicious, especially if red patches are found on the vocal cords and we are able to elicit a previous syphilitic history. The mucous patch usually occurs on the upper or lingual surface of the epiglottis, more rarely on the aryepiglottic folds or ventricular bands, in the shape of small, usually unilateral ulcerations, which are oval in shape, whitish or yellowish in color, surrounded by an angry red areola. They vary in size from 10 to 15 mm. in diameter. The edges are somewhat elevated, and if the secretion be wiped away the floor of the ulcer is found to be the seat of persistent granulations. It is distinguished from the ulceration of tubercle by being larger in size, unilateral, and surrounded by the areola, while the tubercular ulcers are usually bilateral, are white, with no areola and are from 1 to 3 mm. in diameter, and usually found on the laryngeal surface of the

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee: Drs. W. T. Corlett, L. Duncan Bulkley and W. L. Baum.

1. "Leçons sur les Maladies du Larynx," Paris, 1890, p. 229.

epiglottitis. The superficial ulcer may occur with the mucous patch, or it may appear at any time from the second to the seventh year after the primary lesion by the breaking down of a superficial gummatous infiltration. It is often known as a recurrent ulcerative laryngitis. The subjective symptoms vary as to the site of the ulcer, but neither this nor the mucous patch is found below the true cord.

The tertiary form of this disease is characterized by gumma, deep ulceration and cicatricial contraction. The gummatous infiltration is sometimes seen in the character of a smooth rounded tumor of a yellowish appearance, circumscribed, usually on the edge of the epiglottis, the aryepiglottic folds, the posterior wall of the larynx or the ventricular bands. It has also been observed below the true cord, when it is called subglottic. After a certain period varying in time this gumma breaks down into a deep ulceration, although cases are cited where the tumor has persisted for 20 months without ulceration. When ulceration commences we notice the center of the gumma begins to ulcerate first, the process extending to the periphery until all the gummatous infiltration has disappeared. The appearance of the infiltration is sudden and the ulceration is like rapid in progress.

If there be any doubt as to the diagnosis of the condition present, we can corroborate our opinion in a few

chondritis arising which may lead to destruction of the part. Thus Labbé² reports a case where the arytenoid of the left side became detached and was inspired, causing death by suffocation.

When the perichondrium becomes affected there is pain, tenderness on pressure, increased impairment of voice and dyspnea. When this process progresses we often find a sequestrum formed which gives rise to a permanent discharge, either into the larynx or to the outside of the neck through a sinus or direct. The sequestrum may lie embedded in the tissues for years, keeping up a discharge indefinitely, or it may apparently heal, to be renewed from time to time, being apparently a relapse or a renewed attack. This process gives rise to the last stage of the disease, stenosis.

After the sloughing has become complete or almost finished, we are confronted with the cicatricial stage, which is by far the most dangerous part of the diseased condition, owing to the great contraction and the danger of the parts being attached to each other, thus causing a closure of the passages. The epiglottis has an unhappy faculty of uniting with the aryepiglottic folds or the side of the pharynx and sometimes to the ventricular bands. The arytenoid articulations are liable to become stiffened or fixed by ankylosis, thus causing the cords to become fixed in their position, which may be in the median line or any other position. We often have a

Syphilis.	Carcinoma.	Tubercle.
Pain usually slight. Attacks any portion of larynx and ulcerates very rapidly.	Pain constant, lancinating. Attacks any portion of larynx and ulcerates more slowly than syphilis.	Pain severe on deglutition. Favorite site is the interarytenoid space or the base of the arytenoid cartilages; ulcerates slowly.
Rarely seen in the stage of induration. First evidence usually a clear-cut, deep ulcer.	First appearance is that of a new growth occupying the laryngeal cavity; no clear-cut ulcer.	Usually the first appearances are small spots of induration which spread rapidly, followed by great edema.
Some induration around the ulcer, but usually very little edema.	The growth fills or encroaches on the laryngeal cavity.	Great edema of the arytenoids.
Ulcer extends deeply, often involving cartilage.	Growth extends in all directions, involving all tissues in its course.	Ulcer extends laterally, but not deeply.
Surface of ulcer covered with muco-purulent secretion and necrotic tissue.	Surface of growth covered by discharge.	Surface of ulcer covered with thick muco-purulent secretion and agglutinated mucus.
Mucous membrane hyperemic and injected. Laryngeal stenosis not common till cicatrization occurs.	Mucous membrane hyperemic. Laryngeal stenosis common.	Mucous membrane pale. Laryngeal stenosis rarely occurs.
General health unimpaired.	Early in the disease no impairment of general health; later a marked cachexia.	Health impaired previous to laryngeal involvement.
Frequently evidences of syphilis in other tissues.	In primary laryngeal carcinoma no other involvement until later in the disease.	Previous and coincident pulmonary trouble common.
Rapidly improves under iodids.	Not influenced by iodids.	Not influenced by iodids.

days with the administration of large doses of iodids; for there is always a marked improvement after the beginning of this treatment, though it may be transitory. They are distinguished from cancerous growths by the latter being slow to grow and resistant to syphilitic treatment. The deep ulceration is a natural sequence to the gumma and should not be expected before five years after the initial lesion. It is probable that the gumma has broken down before the patient seeks relief, so the first thing we see is the well-developed ulceration. We have a certain amount of local pain, especially on attempting to swallow, a tenderness on pressure. We find abundant mucus secreted containing shreds of necrotic tissue and streaked with blood. Hemorrhage is sometimes so severe as to endanger life from the necrosis of vessel walls, and one or more cases of death have been reported from this cause. Edema is, in some instances, so marked as to interfere with respiration and tracheotomy may be necessary to save the life of the patient. The ulcer in order of frequency is found on the lingual surface of the epiglottis, the true cords, the ventricular bands and the arytenoid space.

When the ulceration occurs near a cartilage such, as for instance, the arytenoid, or cricoid, we have a peri-

web of tissue formed between the cords, or the laryngeal structures become so distorted as to be hardly recognizable, so great is this process of contraction, and cases are on record where the larynx has been entirely obliterated. In this stage it often becomes necessary to perform tracheotomy, and while the immediate result of the operation is good, it must not be forgotten that these patients are required to wear the canula for the rest of their lives. In most cases the voice is completely and permanently lost. The diagnosis is mostly confused with tubercle and carcinoma.

In syphilis the development of the ulcer is acute, occupying only a few days; in phthisis its development is slow, generally after months of throat symptoms, while in cancer it usually occupies a few weeks in development and the ulcer is preceded by development of a growth and nearly always exhibits round excrescences on or around the ulcer. The ulcer is solitary, irregular in shape and 2 or 3 cm. in diameter. The accompanying table gives the main differences between these diseases.

TREATMENT.

The treatment of the disease is both general and local, and the same laws that apply to its treatment

2. Bull. de la Soc. Anat. de Paris, 1857, vol. xxxii, p. 210.

in other parts of the body are, of course, applicable here. We therefore push the dosage of iodids to their tolerance. If there be any tendency to iodid poisoning a combination with 5 or 10 grain doses of sodium bromid given with each dose will often prevent the rash appearing. It is well to start the iodid in 20-grain doses, increasing it 20 grains every two days, or as rapidly as possible till the tolerance is reached. We often experience patients who will be able to take very large doses who will not stand a smaller one. Thus it is possible to give doses from 100 to 150 grains three times daily. In combination with the iodid treatment we give inunctions of mercury, either in the shape of blue ointment or the oleate, and this is administered by rubbing a dram into different portions of the body daily, each rubbing being preceded and followed by a warm bath. After the fourth dose it is well to discontinue for a day or two on account of the liability of salivating our patient. If the gums are touched at all, which should be avoided, we can administer a few doses of potass. chlorate and use a mouth wash of the same. If it is thought best, tonics can be given with the iodids for the support of the patient and after the process of ulceration is passed we place the patient on a prolonged treatment of mercury, in the shape of the protoiodid or bichlorid, instructing him to continue its use indefinitely.

If the bowel is disturbed by the mercury, the addition of a small dose of opium may be added. A favorite prescription of mine is a combination of mercury, iron and phosphoric acid. This is an alterative tonic and will in no way disturb the patient.

The local treatment consists in keeping the ulcerations clean by the use of detergent lotions, followed by the free use of peroxid, applied on a cotton applicator and the cauterization of the ulcerated spots with a solution of iodine crystals in creosote (saturated solution), or the ulcer may be painted or touched with strong solutions, or the solid stick, of nitrate of silver. If the ulcer shows a tendency to spread fast it may be burned with the galvano-cautery. If we find the ulcer very deep or pieces of tissue loose, we should cut away, or curette the necrotic tissue.

After cicatrization has commenced it is hard to effect much in the way of treatment. Our object in this instance is to prevent as far as possible the occurrence of great stenosis which is so liable to occur, and to be ready at any time to perform tracheotomy, as the contraction may progress so far as to preclude respiration through the natural passage. After we have made a tracheotomy we may try to dilate the larynx with bougies and laryngeal dilators, but as yet we are unable to hold out much in the way of improvement by their use.

DISCUSSION.

DR. L. WEISS, New York—What little I have to say relates more to the palliative features. I had a case a few weeks ago of syphilitic laryngeal stenosis, and the pain the patient had in deglutition was something terrific. I had tried many local applications and finally I came across orthoform and an application of a 5 per cent. solution to the affected larynx acted wonderfully, so soothing that the patient for the next six hours could swallow almost without pain. Orthoform is not as poisonous as cocaine so it works in a quite different way. Furthermore, I would emphasize local applications to the throat of unguentum hydrargy. I have used eucain and I found the pain little less, but it does not act as well as does orthoform to alleviate the difficulties of deglutition.

DR. A. RAVOGLI, Cincinnati—A kind of syphilis of the pharynx to which I called attention a few years ago comes in form of round ulcers, sometimes isolated, sometimes multiple on the pharynx, with sharply-defined edges, and a yellow

lardaceous bottom. I do not believe these ulcers have to be classified in the tertiary period of syphilis, but I believe they are only in the secondary period. The ulcers come in different parts of the pharynx, sometimes between the end of the pharynx and the beginning of the esophagus. These come on sometimes with an attack of fever, and with a great deal of pain. The patient claims he can not swallow, and on careful examination I have found one or two of these ulcers in the pharynx.

Fig. 1 (Article of Dr. Wallis).

They yield easily to the treatment, which must be general and local; they are healed up in a couple of weeks, and leave only a very superficial scar. I have at present a case in the hospital affected with this kind of ulcer, showing up about fifteen months after infection; this is located just back of the tonsils on the pharynx. The local treatment which gives me the best results has been washing the ulcer with dioxid of hydrogen, and covering the ulcer with iodoform two or three times a day. In ten or twelve days I have obtained the cicatrization of this peculiar kind of ulceration.

The pain a dentist causes is remembered longer than any suffering he may have prevented.—*Sat. Evening Post*.