would be unquestionably more than overbalanced by going as near the ciliary region as is necessary to make the flap wholly in this tissue. This is the dangerous region of the eye, and the wider one steers of it in any operation the less is the result jeopardized. The sclero-corneal flap is, in a diminished degree, however, open to the same objections. The reason, therefore, for making it wholly in the cornea is twofold: 1. It is farther removed from the ciliary region, and 2. The experience of such men as the late Mr. Critchett, of London, confirms the assertion that this tissue unites more readily than the sclerotic.

There are some objective symptoms that are valuable in giving a prognosis as to the result to be obtained by the flap extraction. The first of these is the condition of the pupil: whether it be active or sluggish, whether it respond promptly to the influence of light and shade, and atropine. The latter condition is the more favorable one, from the fact that the stiff, thick, sluggish iris is predisposed to iritis. The muscle is partially deprived of its animal matter, its fibres are infiltrated with disorganized material which deprives it of its normal elasticity and power to resist inflammatory action. Its vitality is lowered, and consequently its power to resist mechanical injury diminished. Therefore an active pupil can in truth be said to be a favorable prognostic symptom. Again, the flap operation should not be attempted when there is the slightest evidence of conjunctivitis. Cure this first. Neither the patient nor the physician can afford to disregard this one, little, important point. The drainage apparatus of the eye should also be carefully inspected.

When the extraction of the lens is completed, a collapse of the capsule is another favorable indication. The reason for this is twofold. 1. It is an evidence that the posterior capsule is intact, or at least that the vitreous has not been disturbed; and 2. That the cornea is in a healthy condition, as evidenced by its pliability. These are some of the considerations that should govern one in giving an opinion as to the probable results of a flap extraction.

Again, an extraction should not be done when there is any prevailing epidemic, such as cholera or any of the exanthemata. The depressing influences of these upon the mind of the patient disarms, as it were, the physical forces, and thus, in the unguarded moments of nature, golden opportunities are thrown away and forever lost. It is so unlike many other operations, since the slightest error may turn the tide of success and leave the patient in total darkness.

The general condition of the patient's health should also receive the most careful attention. In short, the more carefully every detail, be it ever so small, is considered, the greater will be the chances of success. As the whole is composed of parts, so little ills combine to establish a morbid condition which may defeat the desired result. The experience of the past few years has also wrought some very valuable changes in the after-treatment of flap extraction. When the edges of the flap are brought into close contact with each other and all coagula carefully removed, the present practice is to close the eye, cover it with a circular piece of soft linen, and then fill up the orbital

cavity with little pieces of carbolized cotton, equally distributed. Before applying the bandage, place a few pieces of the cotton around the orbit in such a manner as to prevent too much pressure directly upon the eyeball. I prefer a flannel roller, which should be passed around the head three or four times in such a manner as to cover the eye and give an equal support to the entire surface of the globe.

The other eye should be covered as well, in order to insure perfect rest to its fellow. The bandage and cotton should be changed every twenty-four hours. If all goes well, this is the only dressing that will be required. The old practice of applying cold water dressing has been entirely discarded. It washes away the corneal cementum and embarrasses the reparative process. There are numerous emergencies that may arise, but to detail them here, with the various methods of treatment, would extend far beyond the limits assigned to this paper. Before dismissing the subject, however, permit me to ask of my readers for any innovations on the established order of things contained herein, a resistance that loves to be reasonable rather than energetic.

309 Wabasha St., St. Paul, Minn.

SOME PECULIAR CASES OF EPIDEMIC FEVER OCCURRING IN TOULON, ILLINOIS.¹

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The purpose of this paper is to give a history of a peculiar epidemic which recently occurred in Toulon, Stark Co., Illinois. This history may, however, be prefaced by saying that Toulon is well watered, very few of the wells being influenced by surface water, and no cases of the epidemic occurred in the part of the town where the wells are so influenced. The natural drainage is far superior to that of most towns, and the sewerage has been carefully, scientifically and methodically cared for.

Having lived in the town for forty years, having known all the epidemics of the town, and having only known of one family before in which typhoid fever originated and went through the whole family, I was at a loss to account for this abrupt appearance, and persistent protraction. The number of cases thus far have been twenty-six, the ages ranging from 11 to 67 years. These have all been typical, well-marked cases, though many others in the different families in which the disease has appeared have had some of the premonitory symptoms, but no further development.

Nineteen of these cases came under my care, and in speaking of this epidemic I will only describe those under my own personal observation. The first patient was taken sick July 27, 1885, and they have continued to make their appearance up to the present writing (November 9). The premonitory symptoms for the first ten days are those of typhoid fever, with the exception of more lassitude and more catarrhal trouble. On the eleventh day in thirteen of these cases, and in the remainder on the twelfth day, de-

¹ Read before the Military Tract Medical Society, on November 10, 1885

veloped the trouble which was to be predominant through the course of illness. Four cases were pronounced typhoid with well developed catarrhal fever as a complication. The only symptom lacking in these cases was the typhoid eruption, and that was lacking in all the cases. One of the peculiarities of this epidemic has been that no two cases in the same family have been exactly alike. For instance, I have treated three cases in two families. In the one, the typhoid element was predominant, in the second the malarial, and in the third the catarrhal. The ringing in the ears was present in all, was the first symptom complained of and lasted through the whole course, increasing in severity, so that by the seventh day it became so pronounced that it was almost impossible to make the patients understand anything said to them. The tongue in two cases was red and glossy; in three brown; in the remainder white and flabby. In fourteen tremulous, and in seven pointed.

The stomach was exceedingly irritable in sixteen of the cases, this commencing on the fifth or sixth day, and lasting from twenty to twenty-five days. The ejected matter was bilious all through the course. The liver was engorged, and tender over the right lobe, in every case forming one of the first complaints, and lasting to its termination. Hemorrhage of the bowels occurred in four cases very severely; in one case mild. It occurred in two cases on the fourteenth day, in one on the twelfth, and in one on the twenty-ninth. In all of these cases the red tongue and tenderness in the iliac region were absent.

The hemorrhage lasted in one case four days, in one six, in one three, and in one one day. The last passage in all the cases resembled beef's liver, both in color and consistency, more than anything to which I can compare it; there were no clots, but a congealed mass. There was hematuria in three cases, coming on from the eleventh to the thirteenth day, but it never occurred in a patient who had hemorrhage from the bowels.

The parotid gland was enlarged in six cases on both sides, in five on one side. The enlargement commenced on the fifteenth day in all the cases save one, and in that on the eighteenth day. Abscess formed in but one case, and I opened that on the fiftieth day, no pus being present until that time.

There were convulsions in three cases; in two on the fourteenth and one on the seventeenth day. In two I attributed them to reflex action from the bladder, which I shall describe farther on, and in one to hereditary tendency to chorea. In the two of reflex action recovery took place; in the choreic, death was the result. One had two convulsions, one five, and the fatal case nine.

There was delirium in four cases, it being the delirium of typhus rather than of typhoid fever. The remainder would answer the questions coherently, yet upon recovery, the twenty-five or thirty days' period of illness was a perfect blank. There was no muttering, no wandering except in the four cases mentioned, and they were of that wild uncontrollable type, with the ringing metallic voice found in the delirium of typhus fever.

The temperature was an even one, with nothing of

the zigzag found in typhoid fever. In seventeen cases it ranged from 100° to 100.5° F., in one 104° , and in one 105° . So the antipyretic treatment with quinia was indicated in only two cases. The temperature in the seventeen cases did not vary half a degree at any time for twenty-five days.

Syncope occurred in three cases; in one on the seventeenth, one on the fourteenth, and one on the twenty-second day, in one of the cases lasting four-teen hours.

Epistaxis took place in all the cases from the second to the third day. In the most of them it was mild and subsided after two or three days. In two it was severe and came on every few hours for twenty-three days.

The catarrhal complications were not only present in all the cases, but caused by far the most pain, and were the hardest to control. Some of the cases would be upon the bed-pan six hours out of the twenty-four, and one of them told me who had had three children that she suffered more each time in passing water than she had done in labor.

The urine was scanty, highly colored, and very offensive; frequently not over a teaspoonful after an hour or two of hard straining. It was in the two cases of convulsions I have referred to as being caused by reflex action, as both cases went into convulsions while passing water.

Diarrhœa was present in all the cases except one; and that was the one that had the hemorrhage from the bowels only one day. The discharges were bilious, and the most offensive I ever experienced.

All the patients had a peculiar smell, unlike any odor with which I am acquainted, but just as pronounced as is that of measles and small-pox. In fact, by the second day, I could tell by the smell those coming down with this trouble. The night sweats were severe in only two cases, but occurred in eleven. I omitted to state that the catarrhal affection extended along the whole track of the nose, the Eustachian tubes, and the ear. The fatal case died on the seventeenth day. The eighteen cases that recovered were bedfast from twenty-three to sixty days.

These, I believe, are all the points of interest, save a few words as to the treatment. The first patients presenting themselves with a brown dirty tongue, and many of the symptoms of a bilious attack, I gave them calomel and jalap in powder, 10 grains each, followed in six hours by a Seidlitz powder. But I soon found that I had cases that were going to be protracted, and that I had to guard well my patients' strength, and that persuasion rather than coercion should be followed. I found that 2 grains of calomel, with 3 grains of bicarbonate of soda every second night, was preferable, with 5 grain doses of bismuth through the day. I gave quinine in from 5 to 10-grain doses every two hours through the whole course of the disease, except in the two cases in which I wanted the antipyretic effect; in those I gave to one 25 and the other 40 grains, in the evening, for four days, at which time the temperature came down to 101.5° F. and remained so until recovery. Instead of aural symptoms from the large doses of quinine,

the hearing became better, convincing me that a malarial poison was at the bottom of all these peculiar phenomena, else there would not be such a tolerance for the drug. Turpentine, so useful when the tongue is red and glossy, was not admissible at all, as the only cases to which I gave it had strangury in from six to nine hours after administering it. It would produce that trouble even in 5-drop doses. I found that balsam of copaiba and cubebs in capsules gave the only relief for the bladder trouble. I gave them in capsules, as the stomach would reject them in liquid form.

I gave ergotine for the hæmorrhage from the bowels, Dover's powder and camphor for the delirium, atropia for the sweating, bromide of potassium and bromide of ammonium for the convulsions, 10-grain doses of the potash, and 5 of the ammonium, every half-hour until the convulsive movements ceased. For the syncope I gave the carbonate of ammonia and tincture of digitalis. These drugs, of course, were given as indicated, while the quinia was never omitted until convalescence was fully established, and was then given for a week or more at lengthened intervals.

COCAINE IN HAY FEVER.

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In the issue of THE JOURNAL for February 6 appeared the report of a lecture on the above topic by Dr. S. S. Bishop, in which cocaine is highly recommended for the relief of hay fever. The writer also mentions the fact that the drug sometimes causes unpleasant effects and that it cannot be considered curative.

In addition to what he has said of it I wish to call attention to an effect which I have frequently observed, viz.: Continued use of the drug renders it necessary for the patient to take more and more of it for relief, and finally the constant stimulation of the sympathetic nerves in the nasal tract causes paresis, with resulting swelling of the turbinated bodies, which may at length permanently obstruct the nares. Dr. Bishop states that no cure for the affection has been heretofore discovered, but in this I am confident he has made a mistake. The surgical treatment which he says is "too recent to have afforded permanent results" is as certainly entitled to the distinction of being a curative procedure as quinine is entitled to that of being curative for intermittent fever. It has now been in use for four years, and the cases thoroughly treated by it at first are still free from the disease. I have treated many patients in this way, and every one of them in whom the treatment was complete escaped the attack last summer. The writer suggests that the treatment may cause spasmodic asthma. In this I fully agree with him, as anything which causes closure of the nares may cause asthma, but it is the exception with patients treated by this method, just as it is the exception for people to have asthma in whom the nares are occluded from other causes.

It is true, also, that in his own case two applications of the galvano-cautery were followed by asthma, and that they did not cure the hay fever. Two applications of the cautery never could cure the hay fever, for when the nasal mucous membrane is sensitive enough to cause the disease there is as much of it involved as can be safely cauterized in fifteen or twenty sittings.

We must remember that in both nasal cavities there is an area of mucous membrane of not less than sixteen square inches, and sometimes half of this is involved; at the same time not more than one-fourth or at most one-half a square inch of surface should be cauterized at any sitting, and the last amount will be well borne only in exceptional cases.

In conclusion I wish to reiterate my belief in the value of cocaine for the relief of hay fever, in which disease I think I was first to use it; but I wish also to direct attention to the ill effects which may follow its protracted use, in order that physicians may caution their patients against using more than is absolutely necessary.

I wish, also, to assure the profession that they have in the surgical treatment a cure for the disease which may be relied on in at least nine cases out of ten.

64 State St., Chicago, Feb. 9, 1886.

MEDICAL PROGRESS.

DIGESTION: ITS PHYSIOLOGY AND PATHOLOGY.—PROFESSOR EWALD AND DR. J. BOAS publish (*Virchow's Archiv*, Bd. ci, Heft 2) the results of a number of valuable experiments they have made on inmates of the Woman's Infirmary in reference to the physiology and pathology of the digestive act. One of the inmates was especially suited for this purpose. She was a young woman with a peculiar neurosis of the stomach, of an hysterical nature, in whom for the past six years vomiting had occurred spontaneously almost immediately on the ingestion of fluids, and from two to three hours after partaking of a solid meal. Her appetite was normal and her general health good, and she increased in weight while in the hospital. Repeated examinations showed the process of digestion to be normal. Inspection of the contents of the stomach when she was fasting showed (1) that they were constantly free from aliment; (2) that as a rule the reaction was neutral, in a few cases slightly acid; (3) that neither free hydrochloric acid nor lactic acid was present; (4) that peptone was constantly absent. This is in direct contradiction to what Schultz has recently stated—that the stomach, fasting, has its contents strongly acid. To meet the objection that the act of vomiting might influence the chemical changes, experiments with the siphon stomach-tube were made on other inmates of the hospital in whom there were no disturbances of digestion. These gave results identical with those in the case of Seeger—the patient subject to vomiting. By employing certain reagents, the observers were enabled to separate lactic acid from hydrochloric acid, and de-