In the third series, one patient, a boy of fifteen, had lumbo-sacral tumor after three and a half years, is growing and doing fairly well except he cannot control his bladder; one a girl had lumbo-sacral tumor, is doing well after twenty-one months. Another, a male child with meningomyelocele in mid-sacral region, is doing well after twenty months.

NOTES ON THE RECENT EPIDEMIC OF INFLUENZA.

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At the suggestion of the Health Commission of Boston, the following observations are made by the writer (a field worker in the Health Department) in twenty-seven cases of various types occurring in the present epidemic of acute infections of the upper respiratory and gastrointestinal tracts. In the first place, they all came under his own personal observation, and in the second place, the clinical findings in all of these cases were supplemented by a bacteriological study by Dr. George F. Sanborn of the Boston City Hospital, whose results will be embodied in a conjoined report.

Every practitioner of medicine in this community has, of course, been brought in personal relation with many cases similar to those which form the subject matter of this brief study, and it was felt that a statement of the memoranda in these cases, supplemented by the bacteriological findings, might prove interesting, if not instructive, to those whose duties required attendance on such cases.

All of these cases occurred in Greater Boston within the last few weeks, the epidemic apparently reaching here from the Middle West. While it is not believed that the season of the year is in itself directly responsible for these acute respiratory infections, it is generally conceded that the faulty hygiene which obtains during the colder months of the year may well be an indirect etiological factor.

Fifteen of the cases in this series were males; twelve were females. If this permits of any deduction, it will appear that the sex of the patient is of no special significance. Nor would age appear to be respected by the invading organism, since the writer's cases range from fourteen months to forty-six years of age, and numerous cases have been brought to his attention where even those of advanced years have been victims of this epidemic.

The most striking feature of this series of cases was that they had certain characteristics in common. Primarily, the site of infection was in the upper air passages, very often first in the larynx, trachea and naso-pharynx. For example, 70% of all these cases showed infection in the situations named, and 30% showed gastro-intestinal and respiratory symptoms combined.

The incubation period, as far as could be noted, was very brief, being in many instances less than twelve hours, and in others retarded to seventy-two hours.

The mode of onset in every case of this series was abrupt. There were no symptoms which could be definitely classified as prodromal. All the cases now under discussion were prostrated to a greater or less degree; all were confined to bed, although members of the immediate household, to whom the infection in some cases might be traced, were never acutely ill, were always ambulatory types, and might possibly be considered carriers.

The usual history (70% in this series) was as follows:

The patient taken suddenly ill, found in bed, prostrated, complaining of hoarseness, frequent irritating cough, often paroxysmal in character, accompanied by substernal constriction, marked frontal headache, generalized pain, more pronounced in the legs, and the mental state which might, perhaps, be properly described as one of apprehension.

This initial stage was promptly followed by the appearance of profuse muco-purulent expectoration, which was often greenish yellow, tenacious in character, and was associated with a similar nasal discharge, which might occur in both nostrils, but more commonly in one, suggesting the possibility of sinus involvement.

All of these cases showed fever to a greater or less degree (from 100° F. to 104° F.), being subject to marked fluctuation with remission or exacerbation of symptoms.

Physical examination was very often disappointing to a degree; aside from the perfectly obvious discharges and an unmistakable pharyngitis, physical signs were for the most part wanting. Such was the average case.

These cases remained in bed four to six days, soon relieved of the constitutional symptoms, seldom relieved of the cough, nasal discharge and frontal headache.

During subsequent days, there was in many of the cases of this type, such an amelioration of symptoms as to lead one to believe that the illness had terminated, but a recurrence of the fever, nasal discharge, frontal headache, etc., led one to consider a reinfection.

Some few of these respiratory infections showed an extension of the process to the bronchial tubes with a marked increase in the prostration and, in fact, of all the symptoms.

In no case has the writer been able to determine any definite pneumonic consolidation of the lungs, although one case suggests the beginning of a catarrhal pneumonia at this writing.

Mingled with these usual types were cases (30% in this series) in which the predominating
symptoms were gastro-intestinal. These occurred largely in infants. Such a case would give a history as follows:

That some member of the immediate family had had an infection of the upper air passages for some days, and had come into intimate contact with the child now ill; that the child had shown evidences of infection in the eyes, nose and throat, as in the cases previously outlined, without, however, decided constitutional symptoms over a period covering three or four days; following which, the child became acutely ill with persistent vomiting, intense thirst, and a choleraiform diarrhea. The prostration was extreme. The patients were pale, the eyes sunken, the tongue heavily coated; the temperature in most cases was low, in many subnormal. The pulse was slow and compressible.

No definite signs could be made out on examination of the abdomen, but a general condition of hyperesthesia seemed to prevail, as all these children cried on any attempt at handling by an attendant.

The dejecta were liquid, frequent, copious, and foul smelling in all cases; contained mucus in most of the cases, and blood in two of this series.

The urine was scanty, high in color, and acid in reaction in most cases. Forty per cent. showed albumin; one specimen showed the presence of acetone.

Accompanying these gastro-intestinal types, there were skin manifestations, both urticarial and erythematous. These rashes, however, were transient.

The striking features of these types of cases were:

1. Persistent vomiting.
2. Intense thirst.
3. Prostration.
4. Subnormal temperature.
5. Slow, small pulse.
6. Moist skin.
7. Choleraic diarrhea.

Such were the types of cases which prevailed largely during this recent epidemic.

CONCLUSIONS.

That these conditions were due to a specific organism in some cases and to mixed infections in others, seemed so clearly indicated that, as stated in the early part of this paper, bacteriological studies of the cases were made by Dr. Sanborn.

Clinically it would appear to be a highly communicable condition, spread by mild ambulatory carriers, increasing in severity as it progressed, sparing neither age nor sex, protein in some of its minor manifestations and conferring on its victims no immediate immunity, since several cases showed evidences of relapse or reinfection.

PROPHYLAXIS (GENERAL).

During epidemics such as the present, overcrowded places, especially stuffy traffic vehicles, should be avoided. Households in which the infection is known to exist should be shunned. Breathing fresh air is an excellent measure against any infection. Over-study and overwork weaken one's resistance. Therefore, recreation of the body and mind together is commendable, as it tends to develop the constitution, fortifying it against disease.

PROPHYLAXIS (PERSONAL).

1. Those infected should be careful to protect others from bacilli-laden particles of nasal and buccal secretions by the judicious use of their handkerchiefs.
2. The family physician should be immediately called, so that treatment may be instituted and proper isolation established.

THE DESIRE OF THE HEALTH DEPARTMENT.

When a physician meets with a series of cases of acute respiratory affections having any resemblance whatsoever to influenza, or whenever suspicions are aroused that he is dealing with an epidemic infectious process, it is the desire of the Health Commissioner that the Health Department be notified, in order to establish as early as possible the causal microorganisms, to the end of anticipating and achieving an early control in what possibly might result in a widespread epidemic. This would also enable the laboratory men and the field workers in the Division of Communicable Diseases to carry out much needed research in respiratory affections. By these means the etiology may be eventually worked out, methods for control of epidemics devised, and, possibly, the basis for specific treatment and prophylaxis, by means of vaccines or sera, may develop.

Dr. Sanborn's communication is as follows: Similarity in these cases reported by Dr. Ceconi suggests a common bacterial cause. As a carrier of infection, in this instance, neither the milk supply nor any other generally distributed food has been implicated. Fine particles of secretion, either coughed or sneezed, undoubtedly constitute the medium for transmission of the virus. The highly contagious character of the disease, the clinical course, and the widespread distribution, suggest some bacterial invader other than those commonly held responsible for infections of the respiratory tract in the colder months.

The influenza bacillus comes to mind in this connection as being a possible cause. It is known to be pathogenic, but its specificity as a cause of epidemic influenza has not been completely proven. Nevertheless, it seems fairly well accepted that the influenza bacillus is responsible for epidemic respiratory infections from which it takes its name.
The influenza bacillus is not demonstrable in every case that has typical symptoms of the disease. For instance, Lord reports the finding of the influenza bacillus in the sputum of but three of twenty cases observed by him in 1907. Davis reports the influenza bacillus in only four cases in twenty-four clinically diagnosed as influenza. Courmont states that, given the clinical symptoms pointing toward influenza in the time of epidemic, the fact that no influenza bacilli were found in a given case does not exclude this diagnosis.

Bacteriological examination was made in twelve of the above group of cases, as follows:

In 11, cultures were made from nasal secretion; in 9, cultures from the feces; in 7, cultures from the urine. Smears from the nasal secretion were examined in 12 of these cases.

The results of the examinations were as follows:

In three cases having very acute symptoms and discharge from the nose, smears showed numerous bacilli morphologically, and in staining reaction resembling in every way influenza bacilli. In two of these cases, the cultures upon human blood agar yielded growths also resembling the influenza bacillus. One of these cultures was lost in transplant. The cultures from the third acute case are alive and pure at the present writing.

Smears from the nasal secretion showed fairly numerous minute bacilli, some of them nearly round, the majority of them two or more times as long as broad, and with rounded ends. They occurred singly for the most part, but commonly in pairs, and sometimes in threes. Some of the fields showed a few longer forms. There was no capsulation seen. They decolorized by Gram’s method and stained very light red with safranin counter stain.

Growth on Human Blood Agar. The tubes originally inoculated from nasal secretion showed merely scattered colonies of pyogenic organisms after twelve hours. At the end of twenty-four hours’ incubation, it was possible, with the aid of a hand lens, to discern very minute transparent colonies,—separate, shiny, and with smooth borders. With the naked eye, these colonies could not be readily distinguished.

Pure cultures obtained give all the characteristics above noted. Freshly prepared human blood agar yielded the best growth. Similar agar several days old gave a slight growth or none at all. Colonies did not become confluent. There was no growth on plain agar. No motility noted.

The conclusion that the bacilli here described belong to the influenza group seems justifiable.

The percentage of positive cases in this group corresponds to that found in the two groups above noted, and clinically diagnosed as influenza. It is, therefore, a reasonable supposition, not susceptible to proof, that in this group of cases we are dealing with one or more types of influenza.

In the original cultures, hemolyzing streptococcus, streptococcus viridans, micrococcus catarrhalis, and pneumococcus,—all possible causes of respiratory infection,—were found. Because of the presence of these possibly pathogenic bacteria, proof that the influenza bacilli found are the causal micro-organisms, is impossible. To this end, in these cases, or in any other similar group, the demonstration of specific antibodies in the blood of the infected patients is required.

AN ANALYSIS OF FOURTEEN CASES OF DIABETES MELLITUS UNSUCCESSFULLY TREATED BY FASTING.

By Elliott P. Joslin, M.D., Boston, with F. Gorham Brigham, M.D., Boston, and Albert A. Horner, M.D., Boston.

(Concluded from page 378)

GROUP III. DIABETES OF LONG DURATION.

Changes in the diet and régime of patients who have suffered from diabetes for many years are always dangerous, and particularly so with the cases of extraordinary length. Treatment of such individuals should never be undertaken lightly nor without a full realization of the gravity involved. This has been illustrated by Cases 295, 304 and 310. (See Joslin, Diabetic Standards, Amer. Jour. of Med. Sci., Vol. 145, p. 474, and also Bonediet and Joslin, Carnegie Publication, Nov. 36, p. 115, 126, 1310.) These three were hereditary cases, and had suffered 9, 7, and 19 years, respectively, coming under supervision finally in a debilitated state. Even at that time the danger of changing the diet was appreciated, and unusual care was taken to prevent a fatal issue. The three cases died in a coma, one upon a sea voyage, one after unusual exertion and one for reasons unknown, in periods of 2½ years, 2 months and 5 months, respectively, after being seen.

Consequently, when Case 887 came for treatment, with a duration of the disease of 29 years, unusual apprehension was felt. For 9 days the patient was not allowed to make the slightest possible change in régime for, although she was wretched, she was alive. She was then admitted to the hospital, but with much foreboding, although no alarm was felt by other physicians, experienced in diabetes, who saw her. The following chart shows the progress of the patient.