Lumbar and other Pains.—Backache an early and almost constant symptom, generally confined to the loins, and more rarely running up the spine. General muscular pains, described as a "bruised feeling all over," very common. Pains in joints rare, and in two or three cases only were the small joints noted as having been painful. No joint enlargements noted. Pains in bones very rarely complained of.

Delirium in one case only, and transient, but patients were always very restless and sleepless during the nights of high fever.

Fainting attacks in 12 cases, and a "faint feeling" often complained of.

Epistaxis occurred in one or two cases only.

Salivation slightly in 1 case. Enlargement of salivary glands in 2 cases.

Enlargement of lymphatic glands (inguinal) in a few cases only.

Orchitis none; nor pain ever complained of in these glands.

Duration of Disease.—Four to sixteen days; average, seven days.

Diagnosis.—Dengue liable to be confounded with rheumatism, scarlatina, malaria, and simple continued fever. During an outbreak in 1887 at Bombay the disease is stated to have been variously spoken of as "rötheln," "epidemic rose rash," and "simple continued fever." Dr. Sandwith speaks of the difficulty at Cairo of distinguishing dengue from scarlatina, and alludes to the liability of confounding the disease with simple continued fever, and says that the contagiousness and appearance of the eruption in dengue will distinguish it. The experience of the outbreak in this ship proves that both the contagiousness and eruption may be absent to a great extent; in fact, the number of cases fluctuated very much. Thus, in February, 1889, there were 22 cases; in March, 12; in April, 8; in May, 16; in June, 26; and in July, 130 cases, etc. Eruption completely absent for first seven months, and the other difficulties in the way of diagnosis on board here were the absence of sore throat and catarrh, absence of pains and swellings of joints, the peculiar thermometry of the disease, and finally the rapidity of convalescence and absence of sequelæ.

Variety.—I feel convinced that this outbreak was one of the many varieties under which this disease shows itself, and, as in this outbreak, often appears without an eruption, and so escapes a true diagnosis.

Mortality.—Nil.

Invalidities.—In no uncomplicated case.

TREATMENT.

Vomiting and retching easily controlled by sinapism or fomentation to pit of stomach; patient kept recumbent and three or four grains of calomel given by mouth. Bowels moved, if necessary, by enema.

Antipyrin failed to stop a rising temperature, but if given at the height hastened defervescence, promoted sweating and also at times relieved the severe headaches.

Aconite tincture used. I was much disappointed with this drug. It was given in various ways, as directed, but it failed to promote diaphoresis, nor was the headache relieved, and the temperature and pulse continued to rise, though the patients were under the influence of the drug.

Belladonna extract given in half-grain doses two or three times daily was of very decided value in relieving the distressing headache and promoting the action of the bowels.

Quinine and sodæ salicylate given in combination is a most powerful antipyretic. A standard of quinine, grs. x, and sodæ sal. grs. xv; increased or diminished by half, and given twice or thrice daily, is a very valuable remedy both in this and remittent fever. It is powerfully antipyretic, promotes diaphoresis, eases muscular pains and promotes the action of the liver.

Salines and diaphoretics given while the fever was running its ordinary course, and in combination with either belladonna or aconite. Belladonna preferred.

Mineral acids and quinine given during convalescence only. Quinine is useless in my opinion, and even harmful in the acute stages of the disease.

Arsenic with quassia, useful as a tonic in convalescence.

Conclusion.—In conclusion I would again call attention to Dr. Sandwith's Report. He and the army surgeons at Cairo were quite at variance regarding the diagnosis of the outbreak there; the former calling the disease dengue, and the latter maintaining it to be scarlatina, as it differed so materially from the types of

dengue seen in India. In "Health of Navy" for 1887 it is reported that even at Bombay, a habitat of the disease, an outbreak was variously described as "rötheln," "rose rash," and "simple continued fever." On board here the material point of difference between the cases at beginning and middle of outbreak was the absence or presence of the eruption, but then again, even during the height of the outbreak, the eruption was more frequently absent than present. Further, on the East Indies Station, there is a disease which closely resembles, or is a type of dengue, as regards general symptoms, but with complete absence of eruption and sequelæ. I venture to submit the following propositions, which possibly may not be deemed very extravagant:—

1. That dengue is a disease not yet thoroughly understood.

2. That it varies very much according to locality and intensity of poison.

3. That there is a disease closely allied to but differing from dengue in absence of eruption and sequelæ.

My own convictions are conveyed by propositions 1 and 2. **Postscript.**—Since writing the above, H.M.S. *Agamemnon* has returned to Malta, where influenza has been rife. The crew of this ship have suffered much less up to the present than any of the other ships. Has the dengue protected us? The treatment of influenza has been much the same as in dengue, but the results obtained with belladonna and aconite have differed. Aconite has best relieved the general pains and headache. Belladonna has been most serviceable where the cough has been the prominent symptom.

INFLUENZA AND PNEUMONIA.

By JOHN HADDON, M.D.,

Canonbie, N.B.

At the present time, when influenza is so prevalent and causing such excitement all over the world, there are some questions one would like to have answered, such as: (1) Does it depend entirely upon climatic influences? (2) Is it infectious? (3) Do sporadic cases occur?

With the view of assisting in the solution of some of these questions, I desire to give an extract from notes of cases of pneumonia written out some years ago. After cases of croupous pneumonia and infectious pneumonia, I had written: "On another occasion I met with four cases in the same house, with more or less pneumonia, which I consider to be due to climatic influences, and called influenza. They may have been due to infection. The first case, T., aged 28, who was in business in Manchester, began on February 26th, 1877; his sister M. began on March 17th; his mother on March 19th; and another sister on April 1st.

CASE I.—T. went about till the eighth day, and the lung was not right till the nineteenth day, there having been a considerable amount of broncho-pneumonia. I give charts of the other cases, with short notes of two.

CASE II.—Mrs. S., aged 50. On March 19th felt sick, giddy, and had a headache. On March 21st began to cough. The cough sounded croupy. At night temperature 102.8°, pulse 128. She had

six grains of quinine. Perspired much. March 22nd (fourth day) still perspires and coughs. Temperature 100°, pulse 108, morning;

temperature 102.4°, pulse 110, evening. March 23rd (fifth day) delicious in the night. Profuse yellow expectoration. Temperature 99.6°, pulse 100, morning; temperature 100.4°, pulse 100, evening. March 24th (sixth day) had a good night. Moist *râles* on right side, with comparative dullness half way up. Temperature 99.8°, pulse 100, morning; temperature 100.4°, pulse 92, evening. She was soon up, but continued weak for a while.

CASE III.—Miss B. S., aged 25. Had pain in the chest on April 1st. On April 3rd some cough. Friction heard on left side. April 4th friction on left front. Moist *râles* on left, behind. These signs

continued. The temperature, which was 105.4° on April 6th, fell to 99.4° on April 7th, and she steadily improved. The chart shows the course of temperature and pulse.

CASE IV.—M.S., aged 9, began on March 17th with high fever, and went to bed at once. Broncho-pneumonia was developed, and ran a regular course. The chart shows the temperature and pulse.

From these cases there can be no doubt that the son introduced an infectious disease, which attacked three other members of the family. He stayed at home on March 6th, and on March 17th the second case occurred. There were no other cases in the district, and these were the only cases of the kind I ever met with. I was led to the belief that they were cases of influenza, from having read of the epidemics which used to visit this country; and the symptoms and course of the disease seem to correspond with those of the influenza which is now epidemic.

From the chart of Case III this disease evidently has a primary and secondary fever, such as all diseases depending upon a bacillus have, the primary being caused by the presence of the bacillus, and the secondary produced by the effects of the bacillus on the system.

Dr. SAUNDBY'S *Lectures on Bright's Disease* have been paid the compliment of translation into German. The translator is Dr. W. Lewin, the publisher Hirschwald.

REPORT ON
THE VALUE OF SODIUM SILICOFLUORIDE
AS AN ANTISEPTIC.¹

By T. JESSOPP BOKENHAM, M.R.C.S., L.R.C.P.

FOR some years it has been an accepted idea among medical men that in antiseptics they would at length find the means of combating infective diseases (that is, those due to specific organisms). Experiments made by Dr. Theodore Cash, F.R.S.,² showed that corrosive sublimate, when administered to guinea pigs, would afford protection from anthrax, the animals under certain conditions living quite unaffected by the inoculation. The danger here lay, however, in the extremely poisonous nature of the antiseptic itself, and it has been a desideratum to find a less dangerous substitute.

Such, I thought, might be the silicofluoride of sodium which was introduced to my notice some months back by Messrs. Burroughs, Wellcome, and Co. With regard to this substance the following particulars may be interesting, as they formed the basis of my subsequent work. It was introduced by Mr. Wm. Thomson, F.R.S.E., who, in a paper before the British Association in 1888, claimed that it was a powerful antiseptic, non-volatile, colourless, sparingly soluble in water, neutral, and above all, non-poisonous. Its saturated aqueous solution, 0.61 per cent., was unirritating, although large doses of the solid acted as an emetic. However, as much as 7 grains had been taken as a dose, though perhaps it was not desirable to take more than $\frac{1}{2}$ to 1 grain. Its antiseptic properties were demonstrated by adding the salt (1 to 700) to flour paste, or 1 to 200 to an infusion of chopped meat in water. The mixtures were placed in an incubator, and watched. After several days they were entirely free from either mould or decomposition. This was a more successful result than could be obtained with corrosive sublimate (1 to 500). The salt acted like alcohol in retarding the action of pepsin in albuminous bodies.

Mr. Robson, F.R.C.S.,³ used the drug as an antiseptic in a great variety of surgical cases, and considered it specially useful in those cases in which there might be risk from absorption, if mercuric chloride were used.

Dr. Conrad Berens* found a solution of 1 to 1,000 strong enough to prevent all decomposition of vegetable and meat infusions, even when these were exposed for some weeks. He also found that a dose of 10 gr. in $\frac{3}{4}$ iv of water could be borne without inconvenience, taken on an empty stomach and repeated three times daily for seven days.

After reading these accounts, I thought it would be interesting to undertake a series of experiments on the germicidal value of the substance given internally, working on the lines of Dr. Cash,⁵ who found that a solution of mercuric chloride administered to a animal would protect it from the effects of a subsequent inoculation with anthrax. Before, however, undertaking this Dr. Brunton suggested that it would be well to first test the action of the drug on fermentation. This I proceeded to do. I took four flasks, and filled them as follows: Flask 1 contained 8 oz. glucose solution in water, sp. gr. 1040 at 15° C.; Flask 2 contained 8 oz. glucose solution in Na₂ Si F₆ soln. (1 to 150), sp. gr. 1040 at 15° C.; Flask 3 contained 8 oz. glucose solution in Na₂ Si F₆ soln. (1 to 300), sp. gr. 1040 at 15° C.; Flask 4 contained 8 oz. glucose solution in Na₂ Si F₆ soln. (1 to 600), sp. gr. 1040 at 15° C. To each I added a definite quantity of fresh yeast, and then plugged the necks, placing the flasks in an incubator at temperature 25° C. The specific gravities were taken every twenty-fours during seven days. It was thus found that the solution in Flask 1 became of lower specific gravity, whilst that in the others remained unchanged.

In experimenting with weaker solutions I adopted another method. A number of tubes of equal length and calibre were taken. These were filled with solutions of Na_2SiF_6 of various strengths, each containing besides equal weights of glucose. Some actively growing yeast was then added; the tubes were inverted over pure mercury and placed in an incubator. The volume of CO_2 formed by the fermentation could thus be observed from day to day. The result is shown in the accompanying table:—

¹ The expenses of this research were defrayed by the Therapeutic Committee of the British Medical Association.

² Report on Certain Chemical Disinfectants.

³ JOURNAL, May, 1888.

⁴ *Therap. Gaz.*, 1888, p. 443.

⁵ *Loc. cit.*