101° F., but in all there was the markedly putrescent odour common to such cases. Whether there was any true relation between these puerperal cases and the outbreak I have described, or whether it was only a very curious coincidence, I am unable to say; but the fact remains that there was a connection in each instance, and, furthermore, the outbreak as a whole had a most unusual character.

It is true that scarlet fever had occurred in a neighbouring parish, and probably the child in whose urine I discovered albumen had previously had an attack; but the virulent type which the disease assumed in the outbreak in question inclined me to dissociate the two, or at any rate to think that the character of the disease was intensified in an alarming way by the conditions present in the cottage. Then, again, how are we to explain the illness, which, judging by the tonsillar exudation, partook of the character of diphtheria, and which was undoubtedly contracted from the children who had scarlet fever? There is one more fact I have omitted to mention, namely, that the husband of the lying-in woman who first had the puerperal complication suffered from a severe attack of follicular tonsillitis during the time she was ill, and perhaps I ought also to say that no one of the three women had any symptoms pointing to a scarlatinal nature in their illness.

In conclusion, I should say that Dr. McKinnell regarded the cases as examples of scarlet fever and diphtheria, but he remarked that it was unusual to find the two diseases flourishing side by side as they did in this instance. I should also mention that the outbreak occurred in a most isolated spot, and the dwellers there had little communication with the more populous places around.

A CASE OF CASUAL COW-POX IN MAN.¹

C. E. READING BUCKNILL, L.S.A.LOND.

On May 7th, 1894, G. S., a milkman, aged 24, employed at a dairy in Twickenham, applied for advice, complaining that for some few days past he had suffered from severe headache and prostration, with a general disinclination for work. His tongue was furred and there had been a slight deposit in his urine, but his appetite was good, and he slept well. He also showed what he thought was a boil upon the flexor surface of the left forearm, which first appeared three days previously. It was somewhat elevated and slightly vesicular, but beyond a most feebly-marked areola and some tenderness and enlargement of the axillary glands, there was not much to indicate the true nature of the disease. About an inch above the vesicle a papule of small size was to be seen, and another about an inch below. These had made their appearance on the two consecutive days after the first, but were too small to present any marked characteristics.

On being questioned as to the condition of the cows he milked, nothing definite could be elicited, and he was told to observe whether anything was to be seen on their teats or udders. The following morning he reported that there were scabs on the teats of one cow, and when, a few hours later, I examined the animal in company with the medical officer of health, to whose courtesy I am indebted in writing this report, it was discovered to be suffering from a disease which was evidently cow-pox. On the ninth day after exposure to infection, and the seventh day after the eruption of the first papule, the three pocks on the man's arm presented a most typical appearance, especially the first, which was the largest, and occupied the central position. There was well-marked induration and extensive areolæ of a bright rosy colour; the pocks were elevated, circular, and umbilicated, with a dull creamy-white ring at the circumference. This dull creamy-white colour, in place of the usual bluish-tinted, pearl-like, or silver-hued appearance of Jenner and other observers, may be accounted for partly by the presence of four excellent marks of primary vaccination, and partly by the fact of the epidermis being coarser in texture and less translucent upon the forearm exposed to all weathers than in the upper arms. The vesicles, on being punctured, were found, however, to contain clear fluid lymph, reinoculation with which on this

day, by its failing to take, proved that the disease had reached its crisis, which fact was further verified by the commencing formation of three crusts within the next twenty-four hours.

It is interesting at this point to note in operation the well-known law that successive inoculations with vaccine lymph upon different days in the same subject produce mature vesicles on one and the same day. Dr. Cory states that primary vaccination with humanised lymph may be performed each day in the same case for a week, the seventh insertion running a rapid course of twenty-four hours, and producing a vesicle equal in maturity to those of the first and all the intermediate days.

The somewhat unusual seat of inoculation is readily explained by the chapped and fissured condition of the skin of the arms, due to the use of water in scouring the milk vessels, and the prevalence of east winds at the time. G. S. intelligently narrated to me how, when the cow was restless whilst being milked the first day or two, he had frequently to shift his stool in order to avoid being knocked over, and previous to resuming work would hitch up his shirt sleeves, his virus-laden fingers passing over the very site of the vesicles, and where chapping and fissures had been most pronounced.

The history of the cow is unfortunately most imperfect and unsatisfactory. It had only recently been purchased (on April 30th) with another from a local dealer in Teddington, and these were the only two kept at this particular dairy. All efforts to discover the district from whence the cow was imported proved unsuccessful, the dealer repudiating the possibility of the animal being affected in the least degree, either at the time of purchase or sale, and afterwards professing that he kept no record of the farmers from whom he bought his cattle or of the places they came from, but that he had dealings at various markets all over the country, and it was beyond his power to say where he bought any particular animal.

At the date of purchase there appears to have been no marked constitutional disturbance—the appetite was good, there was no horripilation, and the dairykeeper assured me the animal was in excellent condition. On being milked, however, the teats were found to be very tender, and the milker several times narrowly escaped being knocked over, especially when drying out, as the teats are then pulled rather than milked and the sores would naturally get somewhat roughly handled.

At first the cow, which was stalled, gave 16 quarts of milk daily, whereas a few days later, after the decline of the disease, it commenced yielding 18 quarts regularly, indicating no doubt that there had previously been some slight degree of pyrexia. The apparently healthy condition of the cow during an attack of cow-pox, together with an appreciable diminution in the quantity of milk, are facts noted by Professor Crookshank in his valuable papers on the Wiltshire outbreak, contributed to the BRITISH MEDICAL JOURNAL in July, 1888. The button-like crusts—for I regret that the disease was brought to my notice too late to observe it in the vesicular stage—were confined to the teats alone, being situated chiefly upon the two anterior ones; they were very numerous, some of them showing distinct traces of umbilication. They were for the most part oblong in shape, as Fleming says is usually the case in this situation, those on the udder being almost always circular. This difference is no doubt due to the vesicles on the udder being undisturbed, whereas those met with on the teats become ruptured at an early period by the hands of the milker, and give rise by superinfection to multiple coalescing pustules spreading downwards towards the free end of the teat. The fact of the long diameter of the pustule being parallel to the long axis of the teat seems to substantially support this hypothesis. In the illustrations to Crookshank's papers, however, the crusts are more or less circular and of a dark brownish black colour. In the case under notice they were of a much lighter shade, and pale orange-brown or amber in colour. The cicatrices seen a month after the separation of the crusts were neither depressed, pitted, nor puckered, but smooth and shining, on a level with the surrounding skin, and of a pale flesh-coloured tint. Although milked twice a-day by the same man, the second cow showed no

¹ Read before the West London Medico-Chirurgical Society, February 1st, 1895.

evidence of the disease beyond one small circular crust on one teat about the size of a split pea, which certainly would not have been recognised as cow-pox had it not exactly resembled in colour and configuration the pocks of the first animal. Taking into consideration the appearance of the crust and the circumstances of the case, it is very probable that both animals contracted the disease at the same time and from the same source.

From the descriptions of this disease, as given by various authors, bovine variola differs considerably in regard to its local phenomena, and the diagnosis is by no means easy. Bousquet, in his *Nouveau Traité de la Vaccine*, writes:

Not only do the general symptoms present no fixed type, but the local appearances themselves constantly vary, the disease always being the same; in the first place, the shape of the pustules is not always round, some are oval, others elongated; the former are flat and depressed, the latter globular, conical, etc. As regards the colour, some are white, others of a transparent or slaty white, while others again are yellowish, copper coloured, etc. It all depends even upon the colour of the teats. The areola may be present or not, the shade of the skin preventing us sometimes from distinguishing it. In short, not only are there differences in the characters described of the development, shape, nature, and progress of the pustule, but there is nothing which absolutely indicates true cow-pox, and nothing which excludes it. According to Verheyer, there is only one infallible means of diagnosing it, and that is by its anatomical structure.

Fleming also mentions this variable colour of the vaccinal pustules. In a series of articles in the *Veterinary Journal* he says:

If the skin is fine and white the varioles have a silvery white, bluish white, or slaty hue; if it is thin but dark coloured they are leaden grey; if the hair is of a bright shade they have a colour varying from a bright red to a pale or blood red tint, but always wear a metallic lustre. On a thick, white, and wrinkled skin they have a dull opaline lustre.

To further convince myself of the correct diagnosis of this rare disease, I prevailed upon G. S., after repeated refusals, to consent to be revaccinated. Dr. Hime kindly sent me some reliable calf lymph for the purpose, and vaccination was attempted in four places, not one of which showed more than the slight topical irritation one might have expected.

As to the exceeding rarity of this disease, it is probable that many cases may crop up which are never brought to the notice of veterinary surgeons or medical men, and consequently escape being recorded. Bovine variola not being scheduled in the Contagious Diseases (Animals) Act, it is only natural that cowkeepers and dairymen, not wishing their trade to be seriously affected, should keep the knowledge of the disease existing among their cattle to themselves; and where a limited number of cows are kept and only one or two men employed to do the milking, the chances of confirmatory proof by casual inoculation are reduced to such an extent, especially when the primary disease is mild in character as in the case of the second cow, that no one may have the remotest idea of its existence.

A BREAD SUBSTITUTE FOR DIABETIC PATIENTS.

By R. T. WILLIAMSON, M.D. LOND., M.R.C.P.,

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WHILST making trials of a number of diabetic biscuits,¹ I had one prepared which I think will be useful, especially in hospital practice and for poor patients. These biscuits consist of a combination of aleuronat and cocoa-nut powder. Aleuronat is a flour (a yellowish powder) which contains 80 to 90 per cent. of vegetable albumen and only 7 per cent. of carbohydrates. It has been strongly recommended by Professor Ebstein for diabetic patients. The preparation of diabetic food from aleuronat presents considerable difficulties, however. In order to use it for diabetic bread it is necessary to add a considerable amount of ordinary starch-containing flour, and the value of such bread is greatly diminished thereby. I find, however, that, by a simple combination of aleuronat and desiccated cocoa-nut powder, cakes can be very easily prepared. Cocoa nut contains a large percentage of fatty matter (70 per cent.); a small quantity of sugar is also present, but this can be almost entirely removed by fermentation.

¹ Especially those recommended by Ebstein and Saundby; *Deutsche med. Woch.*, No. 19, 1892; *Med. Chron.*, September, 1892; *Birm. Med. Jour.*, No. 5, 1893.

For the preparation of these cakes, 2 ounces of desiccated cocoa-nut powder are mixed with a little water containing a small quantity of German yeast. The mass is then formed into a kind of paste, and this is kept for half an hour or longer in a warm place. The small amount of sugar contained in the cocoa nut is almost entirely decomposed by the fermentation produced by the yeast, and the cocoa-nut paste becomes spongy. Two ounces of aleuronat, one egg beaten up, and a small quantity of water, in which a little saccharin has been dissolved, are now added to the cocoa nut, and the whole well mixed until a dough is formed. This is divided into cakes, which are baked in a moderate oven for twenty or thirty minutes.

Messrs. Callard and Co., of Regent Street, have kindly supplied me with a desiccated cocoa-nut powder, from which the small amount of sugar has been almost entirely removed. If this be employed then the addition of the yeast is not necessary; 2 ounces of aleuronat, 2 ounces of cocoa nut, 1 egg (beaten up), and a little water sweetened with saccharin are simply mixed together, divided into cakes, and baked. The cakes are most palatable when newly made. If they have been prepared more than twenty-four hours, the taste is greatly improved if they are slightly warmed before the fire. They are also improved by being buttered. The advantages of these cakes are: 1. A diabetic patient can have them easily prepared at his own home. 2. If so prepared, they are cheap in comparison with most diabetic foods (aleuronat can be obtained from R. Hundhausen, Hamm, Westphalia, Germany, in parcels containing 4½ kilos. for 7s., that is, about 9½d. per lb.; fine desiccated cocoa-nut powder is supplied by Messrs. Lyon and Sons, 4, Bath Passage, Birmingham, in tins containing 112 to 130 lbs. at 4½d. per lb.). 3. They are much more palatable than most diabetic cakes; to many persons they are very palatable. 4. They contain a large quantity of vegetable albumen and fatty matter, and only a very small amount of carbohydrate. A solution of iodine gives no blue coloration with the cakes, and hence the starchy matter must be very small or practically absent. I think these cakes will be found useful as a bread substitute, especially for those diabetic patients whose diet ought to be rigid, that is, for cases of the milder forms of the disease. When given to diabetic patients in place of ordinary bread, of course a great diminution of the quantity of sugar excreted in the urine is observed.²

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

HICCOUGH FOR SEVEN MONTHS.

A CASE of hiccough of the above-mentioned duration, coming on in violent paroxysms, is now being treated in the hospital of S. Maria Nuova at Florence.

T. D., aged 44, a single woman, was admitted on January 27th, 1895. Her family history was good. She was backward, and could scarcely articulate till 5 years of age. Menstruation began at 17: it was nearly always regular but scanty; her general health was good. At 20 she had a fright from her bed catching fire, followed by fever for four or five days. About this time she was seized by a violent pain in the stomach which lasted three days, and left an uneasy sensation of tightness and distension aggravated by taking food. Later on, until the age of 37, she suffered from general weakness. There was no vomiting, acidity, or eructation, only occasionally a slight pyrosis. Seven years ago she was, as cook, exposed to great heat, and experienced severe pain in the left side of the abdomen, complicated with diarrhoea lasting sixteen months. She passed four or five mucous watery dejections daily; this was followed by excessive general weakness, on which an attack of malaria supervened.

At the beginning of August, 1894, apparently coincident with mental worry, she was seized with frequent eructations.

² Messrs. Callard and Co., of Regent Street, London, and their Manchester agents, Messrs. Mottershead and Co., have undertaken to supply these cakes to anyone who may require them ready made.