TYPHOID FEVER; PERFORATION; RECOVERY.

By GEO. A. BRANSON, M.R.C.S. &c.

A. B—, a professional nurse, aged twenty-six years, who was engaged from Melbourne to take care of a little typhoid patient early in April, complained to me on my evening visit (May 5th) that she herself had been "awfully bilious for the last two days." On examination I found she had a temperature of 104°, pulse 110, skin dry, and furred tongue. I told her that she probably had contracted typhoid, and that she must at once go to bed, and stay there. I ordered her hyd. subchlor. (gr. viii.) and pulv. jalap co. (gr. xii.), and sent for a woman to nurse her. (See Chart.) The chart shows, in a most interesting manner, the course her attack ran. The high rise of temperature on the seventh evening of the disease was due to excitement about the arrival of her great friend and fellow nurse from England, Miss Crabtree, whom I had telegraphed for to come up from Melbourne to nurse her. The only medicine I gave her, besides the powder above mentioned, were four minims of the tinctura veratri viridis every two hours until her pulse was below 100, until the tenth day of illness, when, her motions becoming very fetid, she took two grains of naphthaline night and morning for three days, with good result. She ran through an ordinary attack of typhoid upon strict milk diet until the twentieth day, when I was foolish enough to give way to her entreaties, and to permit her to

sit up in bed and to take a cup of chicken broth. For this nature severely rebuked us; her temperature that night went up to 101.4°, and the following night to 103.4°, and her pulse grew rapid again. She then developed phlebitis of the left femoral vein, with great pain, swelling, and stiffness in the thigh and leg; the pain and swelling subsided considerably in three days, but on the evening of the twenty-fifth day her temperature again ran up; pulse 115, weak, and easily compressible. Her tongue became very foul, so I put her on tincture of nux vomica and dilute nitro-hydrochloric acid, of each ten minims, to be taken three times a day, and half-ounce doses of brandy every three hours.

On the evening of the twenty-sixth day her temperature ran up to 103.6°, and, although she was freely sponged with cold water, at 8 A.M. the following morning it was 103.8°. Fifteen grains of antipyrin brought the temperature down a little, but depressed her considerably. On the twenty-eighth day she appeared to be better in every way; but as she was constipated I gave her an enema of ten ounces of hot water, and she responded with six semi-solid light typhoid-coloured stools; her temperature and pulse both ran up again at night, and the following morning her temperature was 104° and her pulse 130. No pain anywhere; she was quite sensible and cheerful, and took the brandy and milk well. The following morning, thirtieth day, she complained of feeling sick after the milk, so I ordered her whey instead; she passed two motions during the morning and one in the evening—small ones with nothing abnormal; but her pulse was very threatening, 140 per minute, and weak, so I put her upon carbonate of ammonia, tincture of digitalis, and sulphate of ether. The following morning, thirty-first day, she again complained of feeling very sick,

with considerable pain in the right caecal region; tongue heavily furred, but not dry; respiration short and hurried, pulse 130, temperature 103°. I ordered hot fomentations to the abdomen, and at midday went back to see her, and found the pain in the abdomen almost gone, the skin covered with cold clammy sweat, pulse imperceptible at either wrist, temperature 104°, abdomen commencing to swell, violently sick and retching; hiccup also present. Heart beating 145 per minute. As the patient had not a single relative in Australia, I told her friend the nurse I was of opinion that perforation of the bowel had taken place, and that the patient might last six hours. Fortunately they were living close to my house, and I could see the patient frequently. At 5 P.M. her temperature was 105°, abdomen much more distended, breathing very shallow and rapid; kept poppy fomentations and a binder on abdomen; pulse imperceptible, patient quite sensible, felt cold, and kept vomiting terribly. No ice could be obtained in the district. Ordered her enemas of brandy and beef-juice every three hours. At 10 P.M. her temperature was down to 100.2°; still pulseless at wrists; heart beat 130. Skin cold and clammy; retching continued, but retained enemas well. Breathing very spasmodic, entirely thoracic. She said her throat was suffocating her. I gave the nurse a bottle of chlorodyne, and directed her to give the patient twelve to fifteen minims very frequently, if restless, either by mouth or rectum; abdomen greatly distended. At 1 A.M. on the thirty-second day her temperature had fallen to 98°. Abdomen intensely distended, pulse imperceptible; still cold sweat and retching. Ordered hot-water bottles to be put round her, to push the chlorodyne and brandy, and gave her eight grains of carbonate of ammonia, which she quickly ejected. I gave her a hypodermic syringe of rectified ether, and directed the nurse to give her a syringe of brandy and ether alternately every half hour; absolutely nothing by the mouth. My prognosis was that she would be dead before daylight; but, on returning at eight next morning, I found that my patient had slept three hours and a half, and although her temperature had been subnormal all night, she was no worse than she was seven hours previously. To continue with the brandy enemas and brandy-and-ether hypodermic and chlorodyne. At 1 P.M. her temperature was up to 99°, but she was weaker, and took less notice of my visit than formerly; from 5 P.M. until midnight she was sinking fast, delirious, pulseless, cold sweat, and intense abdominal distension; could not count her heart beats; still retching violently. On visiting her at eight o'clock next morning (thirty-third day of disease) I found she had slept for a few hours, and had lost the delirium and cold sweat; temperature 102.6°; still retching; pulse at wrist 130; abdomen same as yesterday. Ordered the nurse to continue the brandy enemas, to apply mustard to the stomach, push chlorodyne and ether, and to give half a drachm of oil of turpentine every three hours. Her temperature at 5 P.M. was 104.4°, but her pulse was stronger, and she was not so sick as she had been; no pain whatever. At 1 A.M. the following morning her temperature was 104.8°, but at 11 P.M. it was 102.5°, and she was decidedly better; less sickness, pulse stronger, abdomen still intensely distended. The following day her temperature varied from 104° in the morning to 100° at night, and she was improving splendidly; tongue foul, but no sickness or retching; no pain; less distension; took and retained a little brandy-and-milk by the mouth. To keep on taking chlorodyne, and to take eight grains of bicarbonate of soda and half a drachm of spirit of ether every three hours.—Thirty-sixth day: Slept well last night; tongue cleaning up; abdomen going down; pulse 110, and much stronger; no sickness, so gave her some raw beef-juice and brandy, and, as she had not passed any motion for more than five days, I ordered her a small enema, which pained her considerably, but acted once very efficiently. From this time onwards she improved very rapidly. Her next motion, on the thirty-eighth day, contained a number of small sloughs, and was remarkably offensive. Abdomen getting quite retracted. On the fortieth day she passed a slough fully six inches long by half an inch in diameter; very foul odour. She then made an uninterrupted recovery, and could walk about before returning to Melbourne on June 28th.

I must apologise for these somewhat rough notes. They were hurriedly made in a busy time of a large Bush practice, and with no intention of publication; but there are many points which appear to be of great interest. Was

the relapse on the twentieth day due to my allowing her to sit up and to have chicken broth? I fear so; and yet this rise of temperature might be due to the phlebitis of the left femoral vein; for although the temperature went up to 101.4° that night, and the following evening to 103.4°, yet the next three nights it was not high. There can be little doubt that actual perforation of the gut took place, followed by peritonitis with efficient adhesions. Bristowe, writing of perforation, says: "Death almost invariably follows this lesion, and generally occurs within a couple of days, sometimes in the course of a few hours." I had one other case of perforation this year which proved fatal sixty-eight hours afterwards. I attribute the patient's recovery to the splendid nursing she received, to her own great pluck, to peritonitis, to keeping the bowels quiet with opium, and to the hypodermic injections. Although the actual perforation may have been small, yet the amount of tissue destroyed was immense. Naphthaline answered well as an internal deodorant and disinfectant; I have also used for this purpose iodoform dissolved in sulphate of ether, then mix with vegetable charcoal, evaporate the ether, and mix with glycerine.

Tungamah.

LEPROSY IN KASHMIR: ITS DISTRIBUTION AND ETIOLOGY.

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FOR my purpose the country of Kashmir may be subdivided into:—1. The valley proper—a tract about fifty miles by thirty, comparatively level, bisected by the river, containing several large sheets of water—one, the Woolar, being the largest freshwater lake in India. In the centre of the valley is the city of Srinagar. 2. The tributary valleys, averaging thirty to forty miles in length, comparatively narrow, leading down by steep gradients from the great watersheds. 3. At the heads and sides of these valleys, and also at an elevation all round the main valley, are the uplands and mountain pastures. The population, which is less than half a million, may be grouped as A, urban; B, agricultural; C, fishing; D, herdsmen. In Division 1 of the valley we have Groups A, B, and C. In Division 2 Groups B and D. As we penetrate into the mountains the latter group ever increases.

Now, let us glance briefly at two points—viz., the diet and the distribution of leprosy. Speaking generally, the diet of Groups A and B is rice, a great assortment of vegetables and fruit, meat, milk, and a certain amount of fish. The diet of Group C would be somewhat the same, but includes a very large amount of fish, especially in the case of the boating population around the Woolar lake, to whom fish is a staple article of diet, both fresh and dried. There is a small dried fish industry, and fish thus prepared is sent up to the city. The diet of Group D is largely composed of milk and milk products. To a less extent the herdsmen eat the other articles above mentioned; but from fish they are cut off, from their position, being usually far removed from the lake and river, while the snow streams do not contain fish. Lepers are rather numerous in Kashmir. During the past year we have seen eighty-six as out-patients. Of these, at different times, forty-four have been admitted as in-patients into a special ward. Notes have been taken of many of these cases, but chiefly with regard to their condition and treatment. I have drawn up a table of lepers seen, with the exception of five, within a fortnight. An analysis of this will illustrate some points in distribution and etiology.

The prevailing type is mixed tubercular and anæsthetic leprosy. The number of cases twenty-two; the majority males. Of these eleven were from Division 2 of the valley, six from Division 3, two from Divisions 2 to 3, one from Division 1, while two were unknown. With regard to population groups, one was from Group A, twelve from Group B, none from Group C, three from Groups B, D, four from Group D, while two were unknown. Nine gave a history of other lepers existing in the district or village from which they came; seven denied the presence of other lepers there; six were uncertain whether there were or not.

Fifteen stated that absolutely none of their relatives had the disease; one said his mother was affected; in the case of another, one sister only was leprosy; a third stated that only his mother and one sister were diseased; in the case of a fourth, only an uncle was affected; another patient gave a history of his grandfather being a leper, but his father not; and, finally, one had a brother a leper. In the case of one, the condition of the relatives was unknown. Interrogated as to fish diet,¹ nine had eaten fish frequently, two occasionally, one perhaps in infancy, five never. With regard to the remaining five I have no record.

Now this analysis suggests several interesting considerations:—

(a) A preponderance in males. We do not see many female lepers. According to our books, the percentage of this sex does not exceed 16.

(b) We note that Division 2 of the valley contributes rather more largely than the others. This is partly due to its proportionately large population; then in the winter the people from Division 3 come down into the neighbourhood of Division 2; yet I am inclined to think that if the table had embraced a larger number of cases that Division 3 would be found to contribute the largest number of lepers—viz., from amongst the herdsmen of the country.

(c) The question of the existence or not of other lepers in their district is one on which the testimony of patients is not worth much, as signs in others are often slight and intentionally concealed.

(d) With regard to relatives their testimony is more valuable, because living in the same house they have opportunities of judging. The result of the inquiry is interesting as affecting the question of heredity and contagion. It is a striking fact that in so many instances no other member of the family was affected, as is also the way in which individuals are selected by the disease, and occasionally a generation is skipped. Certainly we should not get such a clear bill of health in the case of the tubercular diathesis. I have examined the near relatives myself in several cases, and satisfied myself as to their freedom. It is the same with regard to their offspring. One patient informs me that his wife, son, and two daughters have all been constantly living with him till recently, yet all are healthy.

(e) In any country where fish is abundant, of course it forms an article of diet. If the questions had been about milk, or rice or mutton, probably every member would have answered in the affirmative. It is a very significant fact that not a single member of Group C, the fishing population, is to be found on my list. Indeed I do not remember ever having seen a leprosy boatman.

Contagion.—There is nothing in Kashmir which can be said really to favour the idea of contagion. The histories of the above patients are rather against it. Still, one is confronted by the question, If leprosy is neither hereditary nor contagious, why does it not die out? I feel that the grouping of the lepers is important. When travelling in the different parts of the valley, if in a given district one leper is found, others will not be far distant. This tends to indicate certain endemic propensities. Again, the fact of heredity being apparently not a very strong factor in reproducing the disease tends to make communicability more probable.

If leprosy is contagious, it is so either by (1) aerial transmission, (2) inoculation, or (3) diet. The first appears opposed to all one's experience. The second, as far as Kashmir is concerned, has never been proved, although the leprosy bacillus has been found present in the discharges. If contagion occurs, it must take place only under favourable circumstances. Surgeons who do the operation of nerve-stretching on lepers do not escape an occasional prick of the fingers. But so far the inoculation experiment has, I am happy to say, failed. Intermediate transmission by flies from wound to wound, or even by mosquitoes, does not seem impossible. Vaccination is not sufficiently practised to be, if done carelessly, a possible source of contagion. Thirdly, diet, including water. Recent researches with regard to milk and tuberculosis direct by analogy one's attention to diet. We must eliminate actual inoculation, due not to diet but to contaminated eating vessels. Diet, I take it, may be at fault, either as a predisposing cause or as containing actual virus. As a predisposing cause, food insufficient or poor in quality and wanting in variety would be apt, speaking generally, to predispose. With regard to actual virus in

¹ See Hutchinson: THE LANCET, vol. i., 1879, p. 230; Brit. Med. Jour., vol. i., 1889, p. 1449.