CONCURRENT SCARLATINA AND ENTERIC
FEVER.¹

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ALTHOUGH many cases are on record of convalescents from enteric fever contracting scarlatina, and on the other hand of convalescents from scarlatina contracting enteric, true concurrence, that is, the incubation and pyrexial stages of the two diseases occurring simultaneously, is not common, and has only lately been recorded, and that in but few instances.

A convenient starting point which sums up previous knowledge is a paper² by Murchison, who, writing in 1859, says that in ten years he saw only one case of scarlatina contracting enteric fever, and that supervened on the twenty-sixth day; he gives, however, some cases of scarlatina supervening in enteric, but goes on to say, "No cases have hitherto been published showing the possibility of these two diseases coexisting."

This extreme view he afterwards modified, and in his classic work on fevers³ says, "In the London Fever Hospital, where it was the practice to treat all forms of fever in the same wards, it was not uncommon for a patient suffering from enteric fever to contract scarlet fever, and I have notes of eight cases in which the eruptions of the two diseases co-existed." Murchison gives notes of two of these cases; in one the scarlatina eruption came out late in enteric—probably in the third week; and in the other case it appeared on the twenty-second day. On the other hand Murchison says⁴ "scarlatina appears indeed to predispose to enteric fever."

The textbook accounts have not advanced further than this. Dr. John William Moore in his excellent work on fevers,⁵ merely mentions Murchison's eight cases, but without analysing them, and gives none of his own. Dr. Marcus Hartfield⁶ alludes to cases of coincident scarlatina, small-pox, and measles reported by Vogel, but does not mention the co-existence of scarlatina and enteric.

Curiously enough other observers went off on an entirely different line. Dr. John Harley, writing in *Reynolds's System of Medicine*,⁷ announced his theory that enteric fever and scarlatina were manifestations of the same poison; and in 1871 he read a paper at the Royal Medical and Chirurgical Society,⁸ arguing, from the general inflammation of the lymphatic glands sometimes occurring in scarlatina, that "the pathological changes accompanying an ordinary attack of scarlatina include all those of the first stage of enteric fever, and that the transition from one disease to another is but a natural pathological sequence, readily determined by any cause which may increase the intestinal lesion." However, as the cases given showed the symptoms of fully-developed enteric on the thirty-second, circa thirty-fifth, fifty-eighth, forty-first, fifty-second, and thirty-second day of scarlatina, these seem to have been cases of enteric following scarlatina.

Dr. Bayard Holmes, in a paper on Secondary Mixed Infection in Typhoid Fever,⁹ which was published in 1889, does not allude to scarlatina; and Dr. H. N. Joynt, in a paper On the Influence of One Fever on Another,¹⁰ published in 1891, deals with the modifying influence of scarlatina on other zymotic diseases, and *vice versa*, but does not give a single case of scarlatina and enteric coexisting or in sequence.

Dr. J. H. Sequeira in 1891 published two cases of enteric fever, complicated by scarlatina, treated at the North-West Fever Hospital in 1890.¹¹ One case was admitted into hospital with scarlatina on the tenth day of enteric, and the other developed the rash of scarlatina five days after rose spots had appeared. These were evidently cases of scar-

latinal infection following enteric, the courses of the two diseases running partly together.

The first cases I have found recorded in which the incubation stages of scarlatina and enteric were concurrent, were recorded by S. A. E. Griffiths, L.R.C.P., in a paper on Scarlet Fever and Enteric Fever.¹² Four cases all occurring in the same family are given. The first, a boy, aged 11, on the sixth day of scarlatina showed characteristic enteric symptoms. The second, a girl, aged 13, got scarlatina three weeks after her brother, and in twelve days enteric was developed. The third, a girl, aged 3, got scarlatina some days after her sister; in eleven days enteric was developed. The fourth, a girl, aged 7, got scarlatina on the same day as the last; in eleven days enteric was recognised. In all there was free desquamation.

The next cases are recorded by Dr. Caiger in a paper¹³ read at the Epidemiological Society, April 18th, 1894, on The Co-existence, or Close Succession, of Two or More Infectious Diseases in the Same Individual. He analysed the cases treated in Rockwell Fever Hospital in four years, and showed that there were 362 cases of infectious diseases running in part their courses concurrently. In 200 of these the febrile stages actually coincided. There were two cases of scarlatina coincident with enteric. At the same meeting Dr. J. F. Payne showed a temperature chart of enteric fever with concurrent scarlatina.

The same year Dr. Edward Carmichael published a paper¹⁴ on Co-existence of Infectious Diseases in the Same Individual. In it he reported the case of a lad, aged 6, who got scarlatina, but although there was free desquamation, the temperature did not fall, and enteric developed. The occurrence of both diseases was curiously proved by the lad infecting his sister with scarlatina and his father with enteric.

Before passing on to the cases that have come under my own notice I would like to mention the adventitious scarlatiniform rash sometimes seen in enteric. It is spoken of by Murchison.¹⁵ Dr. John William Moore also described it in a paper read before the Academy in 1888,¹⁶ and later in his work on fevers;¹⁷ and Jenner gives some cases in which this red rash preceded the rose rash, and was mistaken for scarlatina.¹⁸ Other examples could easily be cited, but I merely

Case I.

¹ Read at the Medical Section of the Royal Academy of Medicine in Ireland.

² *British and Foreign Medical-Chirurgical Review*, July, 1859, p. 194.

³ *The Continued Fevers of Great Britain*, Ed. iii, p. 536.

⁴ *Loc. cit.*, p. 453.

⁵ *Eruptive and Continued Fevers*, J. W. Moore, M.D. 1892.

⁶ *American Textbook of Diseases of Children*, 1894, p. 155.

⁷ *Article on Enteric Fever*.

⁸ December 24th, 1871.

⁹ *Medical Press*, January 16th, 1889, p. 74.

¹⁰ *Practitioner*, 1891, vol. 2, p. 261.

¹¹ *BRITISH MEDICAL JOURNAL*, 1891, vol. 1, p. 849.

¹² *Lancet*, 1893, vol. 11, p. 1307.

¹³ *Lancet*, 1894, vol. 1, p. 1137.

¹⁴ *Lancet*, 1894, vol. 1, p. 1246.

¹⁵ *The Continued Fevers of Great Britain*, Third Edition, p. 516.

¹⁶ *Accidental Rashes in Typhoid Fever*, *Transactions Royal Academy of Medicine in Ireland*, 1889, vol. vii, p. 10.

¹⁷ *Eruptive and Continued Fevers*, 1892, p. 371.

¹⁸ *Fevers*, 1893.

mention these references to show that the occurrence of a scarlatiniform rash during the earlier period of enteric is not sufficient to show concurrence of the two diseases, but other symptoms of scarlatina should be present, such as invasion, distribution of rash, appearance of throat and tongue, and well-marked desquamation.

The following 5 cases of concurrent scarlatina and enteric were observed in Cork Street Fever Hospital during 1895-96. For the careful notes I am indebted to the kindness of Dr. Ernest A. Bourke, our Assistant Resident Medical Officer.

CASE I.—E. A., a delicate, strumous-looking boy, aged 8½ years, was admitted into Cork Street Hospital on August 21st, 1895. He had been attacked by scarlatina seven days previously, and was attended at home by Dr. W. J. Thompson, who, when thought safe to move, sent him into the hospital. On admission there was redness of the back of the throat, and enlarged cervical glands, but no trace of rash; there was also tympanites, enlarged spleen, diarrhoea with characteristic motions, coated tongue, and a temperature of 102°—in fact, all the symptoms of a fairly severe attack of enteric fever. Two days after admission free general desquamation set in. Five days after admission rose spots were noticed, but they might have been present two or three days earlier, as the desquamation would have concealed them. The patient made a very good recovery, the temperature becoming normal on September 3rd, and the lad was discharged from hospital on October 21st. The desquamation in this case was unusually free, and large flakes separated from the hands and feet. The sequel of the case may briefly be recorded. About a week or ten days after discharge from hospital he was suddenly attacked by convulsions, and died in forty-eight hours, apparently from meningitis. There had not been at any time otorrhoea.

CASE II.—S. K., a young woman aged 18 years, was admitted into Cork Street Fever Hospital under my care on August 5th, 1896. Four days before admission she was attacked by sore throat and vomiting; a day or two afterwards a red rash was noticed on the body, and there was diarrhoea. On admittance there were traces of scarlatina rash, especially marked on the legs, the throat was red, the tonsils slightly swollen, and the papillæ of the tongue were enlarged; the patient complained of sleeplessness, the evening temperature was 103.8°. August 6th. The abdomen was distended, there was considerable diarrhoea; salol grs. x ter die was ordered. The evening temperature was 103°. August 7th. The diarrhoea still continued, the motions being light brown and liquid; there was

Case II.

tympanites, the spleen was enlarged, and the tongue was coated. August 10th. On this the tenth day of illness rose spots were noticed on the abdomen, tympany was increased, and the tongue was brown, dry, and transversely furrowed. By this time there was no doubt of the existence of enteric fever, and as the patient was freely desquamating all over, large flakes separating from the feet, the diagnosis of scarlatina was confirmed. From this on the case did well, the temperature gradually falling, so that on the fifteenth day of illness it was normal.

CASE III.—G. H., a girl aged 11, was admitted into Cork Street Fever Hospital under my care on August 17th, 1896. Six days previous to admission she complained of slight headache and pain in the stomach, and on the following day was attacked by pains in the limbs, sore throat, and vomiting, and felt so weak and so ill that she went to bed. For the two days previous to admission she had diarrhoea. On admission there was extensive scarlatina rash over the body; in some places it was commencing to fade; the tongue was thickly coated down the centre, the tip and edges red, the papillæ enlarged. There were sordes on the teeth and

lips; the tonsils and uvula were much swollen, dark in colour, and bearing exudation; the submaxillary glands were enlarged. The temperature on the evening of admission was 102°, the pulse 120. August 18th. The rash was still more faded, but the evening temperature rose to 103.6°, and the patient was slightly delirious; the epidermic application of

Case III.

guaiaicol mvij brought down the temperature 2.0°. August 19th. The diarrhoea continued, the motions being large, liquid, and light brown in colour. August 20th. The abdomen was distended, there was tympanites, sordes on the lips and teeth, the tongue was dry and coated, the enlarged papillæ still showing; splenic dullness was increased, there was diarrhoea with light-brown liquid motions, the pupils were dilated, the patient was restless and inclined to be delirious. Towards evening the respirations became more rapid, there was slight congestion at the base of the lungs, and rose spots appeared. Next day fresh rose spots appeared, and there

Case IV

Case V.

was otorrhea from the right ear; by this time desquamation was well marked. On this evening the temperature reached its highest point (104°), and was reduced by the application of 7 minims of guaiacol to rectum. From this on the enteric fever ran its usual course, except that the temperature became normal on the seventeenth day.

CASE IV.—W. F., a lad aged 10, was admitted into Cork Street Fever Hospital on October 17th, 1896, under my care. Five days previous to admission he had sore throat, headache, and pain in the stomach, but was vomiting, and was sent to the hospital suffering from typhoid. On admission there was a fading rash, best marked on the legs; the throat was red, the tonsils enlarged, a small ulcer being on the left one; the papillæ of the tongue were enlarged. On October 18th the tongue was coated, the face was pale with a hectic flush on the cheeks, the eyes were bright, the pupils were dilated; the abdomen was distended and tender on pressure; there was slight diarrhœa, the motions being liquid and light yellowish-brown. On October 20th rose spots appeared over the abdomen and chest, and during the next three days fresh spots came out; during this period the abdominal symptoms became more pronounced. On October 27th—the seventeenth day of the illness—the temperature reached normal, and by November 5th there was free general desquamation over the body and limbs.

CASE V.—R. K., a lad aged 7, was admitted into Cork Street Fever Hospital under my care on October 27th, 1896, on the second day of illness. He was suffering from scarlatina, and had a well-marked rash, swollen tonsils (the left being ulcerated), and the tongue had enlarged papillæ showing through a creamy coating. The scarlatina ran a mild course, and was free from any complications except slight diarrhœa. Ten days after admission the evening temperature rose to 100.4°, and two nights after to 104°. Gradually the symptoms of enteric fever developed, and the typical range of temperature, enlargement of the spleen, and moderate tympanitis with diarrhœa continued throughout the further progress of the case. Red spots were not, however, noticed. There were no complications, and the temperature became normal on the thirty-fourth day, that is twenty-four days after the first symptoms of enteric. The desquamation was late but free, large flakes separating from the hands and feet.

These cases form an interesting series; they all occurred within eighteen months, 4 being under treatment at the same time. All had well-marked enteric, and all had well-marked scarlatina, followed by free general desquamation. In 4 of these cases the incubation stages were concurrent, the scarlatinal infection being secondary to the enteric, so that in these 4 cases the invasions of the two diseases were almost simultaneous; the earlier prominent symptoms being those of scarlatina, the rose spots developing on the thirteenth, tenth, eighth, and ninth day respectively.

Another interesting point is that the scarlatina, instead of increasing the severity and danger of the enteric, rather seemed to abort it; all the attacks were fairly severe, the temperature on the first appearance of rose spots being, respectively, 102.8°, 102.6°, 104°, and 104.6°, and the tempera-

ture of the fifth case, in which no spots were observed, running up to 104.4°; and yet, in the first case, normal temperature was reached on the twenty-first day, the disease having been mild from the sixteenth day, and in the next three cases normal temperature was reached on the fifteenth, seventeenth, and seventeenth day respectively. In the last case the enteric fever ran slightly over three weeks.

The enteric also seems to have a mitigating effect on the scarlatina. This is especially shown in the third case, which was one of scarlatina anginosa; at any rate the coexistence of the two diseases does not seem to add to the danger of either.

The importance of recognising the possible concurrence of these two diseases is evident, and it should be remembered that the severe invasion of scarlatina may mask the enteric: so that if the temperature of scarlatina keeps up, and abdominal symptoms develop, the possibility of enteric being concurrent with the scarlatina should be borne in mind.

ARMY BOOTS.—The Mayor of Droitwich, Dr. H. Shirley Jones, has offered as a prize a pair of improved army boots to each of the two best recruits of the Droitwich company of volunteers. We have on previous occasions called attention to the defective character of the ordinary contract army boot, and Dr. Shirley Jones's prize will, it is to be hoped, call renewed attention to the matter. The boots which he is offering as a prize are of a very superior kind. A medical officer writes in reference to them: "I never saw such good ones; it is impossible to tell whether they are hand or machine sewn. They have capital flexibility at the waist and an excellent outline along the sole. They lace nice and low down over the instep." These boots are of good appearance, and do not bear the base uniformity of a War Office article.

THE Aldershot District Council, at their meeting on January 6th, resolved to cordially approve and support a scheme for commemorating the happy connection of the Royal Family with the town, and the memorable event this year in the Queen's reign, by raising an endowment fund for the hospital of which the Duke and Duchess of Connaught laid the foundation stone in July, 1896.