A further attempt at blood transfusion into the tibial bone marrow was unsuccessful, and the child died on the fourth day.

The female twin gained weight steadily, never showed any jaundice, pallor, or other abnormality, and on the fifth day haematological examination showed: haemoglobin 100%, red cells 5,000,000 per c.mm. When 6 weeks old she weighed 5 lb. 8 oz. A blood count showed haemoglobin 70% and red cells 4,000,000 per c.mm.

Pathology.—The relevant post-mortem findings were as follows: Naked-eye:—The skin and mucous membranes were deeply jaundiced (bright yellow). Blotchy haemorrhages were present in the lung, and there were a few small haemorrhages on the peritoneal surface of the gut. Bile was present in the intestine. The liver was enlarged and deeply jaundiced; the bile ducts were normal. The spleen was enlarged and firm. The brain was pale. The other organs showed no abnormality, except bile-staining.

Microscopic:—Many of the liver cells were vacuolated as by fat, and about half the remainder showed the clear watery appearance of glycogen infiltration. The reticulum framework was normal. There was widespread haemosiderosis. Bile thrombi were present in the intercellular canaliculi. Fairly numerous foci of haemopoiesis were found outside the sinusoids. These were mostly erythropoietic, though there were a few myelocytes. Primitive blood cells were also present in the sinusoids. There was marked leucopoiesis in the portal tracts, but there were also some erythropoietic foci. The general architecture of the spleen was normal. There was a fairly intense leucopoiesis, but only scanty erythropoiesis. The kidney showed subcapsular glomeruli incompletely developed; no haemopoiesis. The blood in the vessels of the liver and kidney contained many nucleated red cells.

Serology.—The Wassermann reaction in the mother was negative. The results of examination of the erythrocytes of children and mother were as follows:

	α	β	α_1	Anti-Rh	Anti-Rh ₁	Anti-Rh ₂	St	
Mother	+	—	+	—	—	—	+	A ₁ Rh-neg.
1st child	+	—	+	—	—	—	+	A ₁ Rh ₁ rh
Twins { A (♂)	—	—	—	+	+	—	+	O Rh ₁ rh
B (♀)	—	—	—	+	+	+	+	O Rh ⁺ rh

The maternal serum contained a weakly active Rh antibody when first tested on the second day after delivery. When retested a month after delivery the Rh agglutinins were much stronger, and titration at 37° C. gave the following results:

Cells	Rh ₁ Rh ₂	Rh ₁ rh	Rh ₂ rh	Rh ₁ Rh ₁	Rh ⁺ rh	Rh ⁺ rh	Rh-neg.
Titre	64	32	16	64	4	0	0

Comment

The male twin was considered to be affected with haemolytic disease, the diagnosis being based on the clinical, haematological, and pathological data. The picture was that of a jaundiced newborn second child with a progressively severe anaemia in the absence of syphilis, sepsis, or haemorrhage, resulting in the death of the child. In the haematological data the normoblast count was unfortunately not recorded, but at necropsy the liver and kidney blood vessels contained many nucleated red cells. Prematurity, confirmed by the incomplete glomerular development and hepatic glycogen infiltration, rendered the interpretation of the histological appearances difficult. Haemopoiesis was, however, rather more intense than is usual with this degree of prematurity, and there were marked splenic leucopoiesis and excessive portal erythropoiesis. All the above findings are consonant with a diagnosis of haemolytic disease of the newborn.

The female child is considered to be healthy and unaffected by the haemolytic disease. Any suggestion that the above might be a mild case is negated by the clinical and haematological findings.

The blood group Rh has been shown (Wiener, Sonn, and Belkin, 1944; Race, Taylor, Boorman, and Dodd, 1943; Race, Taylor, Cappell, and McFarlane, 1944) to consist of many subtypes, or, more correctly, the Rh gene is an example of multiple allelomorphism. In differentiating the types of Rh certain human sera are used. In this family the mother is Rh-negative (rrh), while the affected child was of genotype Rh₁rh; the unaffected one is Rh⁺rh. It seems that the father is therefore Rh₁Rh⁺.

The maternal Rh antibodies are of the type anti-Rh⁺, and showed a considerable rise in titre during the first few weeks after birth of the child. It will be seen that while they react

strongly with cells of a genotype similar to that of the affected child, they completely failed to react with erythrocytes of a genotype like those of the unaffected infant.

In previous cases described (Potter, 1944; Kariher, 1943) the unaffected child has been of the same group as the mother—that is, Rh-negative—and therefore quite incapable of reacting with Rh antibodies in the maternal serum. In this case, however, the child is Rh-positive, and it seems that the mother has failed to respond adequately to this stimulus—hence a normal child.

These observations afford substantial confirmation of the theory of Levine *et al.* (1941) that iso-immunization of the mother by "dominant hereditary blood factors" seems necessary for the child to be affected.

Summary

A case of haemolytic disease of the newborn is described in one of dizygotic twins, both being Rh-positive but of different genotypes.

The affected child became jaundiced within six hours of birth and died four days later, post-mortem findings confirming the diagnosis.

The Rh agglutinins detected in the maternal blood correspond to sensitization by the affected child, thus confirming the iso-immunization theory.

Our thanks are due to Prof. S. L. Baker, Dr. Ramsey, and Dr. J. F. Wilkinson for permission to publish this case. We are indebted to Dr. G. L. Taylor for a supply of St serum.

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Medical Memoranda

Impetigo treated with Sodium Penicillin Cream

In view of the present overcrowding in Service conditions the following case record may be of some interest.

On July 12, 1944, a rating complained of a rash on his face which was irritable, wet, and spreading. This on examination showed typical raised yellow crusts and was diagnosed as impetigo. Treatment was started by de-scrabbing with warm eusol, thoroughly drying, and applying twice daily a paint consisting of acriflavine 1/2 gr., tannic acid 20 gr., and water to 1 oz.

FIG. 1.

In spite of treatment the condition continued to spread, and ung. hydrarg. ammon. dil. was tried without effect. On July 21 the patient was admitted to sick quarters, when Fig. 1 was taken.

Treatment with sodium penicillin cream was now begun. This consisted of equal parts of lanolin, cod-liver oil, and water, to which was added enough sodium penicillin to make a cream of 500 Oxford units per gramme. The cream was applied thinly twice daily after de-sabbing with warm eusol. The treatment was repeated for three days. On the second day of treatment there was a vast improvement, with at least 50% reduction of the lesions, the remaining areas being dry and showing signs of healing. On the third day of treatment all the smaller spots were healed and the larger ones were 25% of their original size. The spots on the pinnae were much slower in healing than those on the cheeks or neck. On the fourth day (July 24) all areas except the lower part of the right ear were healed. Two days after this the spot on the ear showed no change. Treatment was altered to ung. hydrarg. ammon. dil., and this spot cleared on July 31—i.e., 10 days after penicillin treatment had been started.

A Gram-stained smear of the lesions before sodium penicillin treatment showed a mixed infection of streptococci and staphylococci, also a few Gram-negative cocci and bacilli—type not recognized.

In all, 10 g. of cream was used, each gramme containing 500 Oxford units: total local dosage, 5,000 Oxford units. No parenteral treatment was given. This cream has also been employed with equal success on septic burn cases. As a face cream it is too soft, tending to run downwards.

FIG. 2

The photographs show the patient before sodium penicillin treatment was begun and four days later, when all areas had healed except a small spot on the lower part of the right ear.

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Carcinomatosis simulating Appendicitis

The following unusual case may be found to be of clinical interest.

A patient aged 50, suffering from cardiac disease, developed symptoms of appendicitis. Generalized central abdominal pain settled down in a tender right iliac fossa, with vomiting, rise of temperature, and slight leucocytosis. There was no history of rheumatism or of syphilis, and the Kahn blood and C.S.F. tests were negative. While further investigation was in progress a cardiac attack suddenly proved fatal, and a post-mortem examination revealed inflammation of the appendix due to invasion by secondary carcinoma. Both the internal and the external appendicular structures contained growths, while an intracaeal mass obstructed the appendix orifice. The coronary arteries were in bad condition, with thrombotic obstruction of the first part of the left. There was generalized arteriosclerosis.

Microscopical examination revealed inflammation and invasion by columnar-celled tubular carcinoma which was secondary to a recto-sigmoid carcinoma of small dimensions but showing unusually early spread. Blood-stained fluid was present in the peritoneal cavity and there were a few peritoneal metastatic implants.

Before the "appendicular" attack there had been no signs or symptoms of any intra-abdominal pathology. This is a type of case which serves to warn that a light-hearted prognosis given before an intra-abdominal operation can sometimes be rudely shattered.

I am indebted to Dr. R. Ström-Olsen, physician-superintendent of the hospital, for permission to publish this case.

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Reviews

TREATMENT OF SYPHILIS

The Modern Treatment of Syphilis. By Joseph Earle Moore, M.D., with the collaboration of Jarold E. Kemp, M.D., Harry Eagle, M.D., Paul Padgett, M.D., Mary Stewart Goodwin, M.D., and Frank W. Reynolds, M.D. Second edition, third printing. (Pp. 717; illustrated 38s. 6d.) London: Baillière, Tindall and Cox. 1944.

The second edition of *The Modern Treatment of Syphilis* by Joseph Earle Moore appeared in 1941, and was reviewed in these columns on Aug. 1, 1942; a second printing was carried out in May, 1943, when the chapter on intensive arsenotherapy of early syphilis was completely rewritten and a chapter on venereal disease control in the U.S. Army and Navy included, largely contributed by Frank W. Reynolds, whose name has been added to the list of collaborators; a third printing was carried out in March, 1944, and this is now available.

The section on intensive therapy has been enlarged from 7 pages to 18, and the bibliography much extended. This form of treatment has many advocates and appears to give a high rate of cure; nevertheless, the mortality from treatment, as shown in Table 126, would seem to preclude its routine use, since daily injections of mapharside over a period of 3 weeks give an estimated fatality rate of 1 in 400. Incidentally, the method recently employed in the U.S. Forces in this country, whereby daily injections of mapharside, plus a few injections of bismuth, are given over a period of 20 days, has been remarkably free from fatalities, due, no doubt, in part at least to the fact that patients have all been young and healthy men. It is surprising that no mention is made of penicillin—at least the word is not to be found in the index—for this drug was used by Mahoney in New York as long ago as December, 1943, and is now being employed on a large scale in both the American and British Forces for the treatment of early syphilis. The chapter on V.D. control in the Army and Navy is particularly opportune, and deals with the incidence of these diseases in the armed Forces in peace and war, their control in civil life and their relation to the armed Forces, treatment in the Services, prostitution, prophylaxis, education, punitive measures, and the V.D. control officer in this war. The section devoted to penalties imposed on U.S. Service men contracting V.D. is of special interest; it is generally agreed that such penalties are utterly illogical, do not appreciably reduce the incidence, and do tend to encourage concealment.

This is surely the most compendious and authoritative book in the English language on the treatment of syphilis; but methods are changing so rapidly that much of the contents of such books must be out of date before they reach the reader.

PERSONALITY AND BODILY MAKE-UP

The Physical Basis of Personality. By V. H. Mottram. (Pp. 124. 9d.) Harmondsworth; Penguin Books.

Here is a popular treatise on how much our personality owes to our bodily constitution, written on the whole in simple non-technical language and with that lucidity which is characteristic of the author. Bodily constitution must depend on hereditary endowments; and the cell, with its nucleus, its chromosomes, and its genes, is described. The ballet of the chromosomes and their illumination of the Mendelian theories of inheritance are vividly depicted, and attention is drawn to the advances made in mapping the chromosomes and the identification of the location upon them of unit factors in inheritance at least in the fruit fly. Mendelian transmission in man is illustrated by colour blindness and haemophilia, but it is pointed out that all such characteristics are not clear-cut, and features distinct in the parents may be blurred in the offspring—"one white, one black, and two khaki."

The influence on the personality of variations in the structure and function of the nervous system is pointed out, and Prof. Mottram devotes a long chapter to the effects of over- and under-activity of the endocrine glands, especially the gonads. He is, however, at pains to warn the reader against too easy acceptance of a physical as opposed to a psychic explanation of behaviour. As he says of the pituitary: "The