Later in the day gas could be felt crepitating in the tissues of the abdominal wall and the right foot became frankly gangrenous. That night the patient sank into coma, and death occurred at 11 a.m. on Sept. 13—44 hours after admission to hospital.

Main Post-mortem Findings

During the necropsy gas was readily expelled from the tissues in the neighbourhood of the wound, and the whole of the anterior abdominal wall crepitated on pressure. Later the subcutaneous tissues were seen to be heavily bile-stained and there were areas of gas formation throughout the abdominal musculature.

Gangrene of the right leg was found to have resulted from a large ante-mortem clot which blocked the most proximal two inches of the femoral artery. There was no evidence of vascular trauma. Via the femoral canal, gas had passed upwards, distending the whole length of the psoas sheath. It was also present in large quantities in the loose tissues around the ascending colon. The cystic duct was so acutely kinked by gaseous inflation of the neighbouring tissues that the tense gall-bladder could not be emptied. Owing to the manipulation entailed, it was not possible to estimate the degree of compression exerted on the common bile duct. The liver was pale, and fatty degeneration had obviously occurred. There was moderate enlargement of the spleen, and its pulp was firm, with prominent trabeculae.

The only pulmonary pathology was a terminal basal pneumonia, but the thorax had been invaded by gas bubbles via the right side of the diaphragm and the right pectoral muscles were heavily infected. The left ventricle of the heart was collapsed and the myocardium was pale and friable.

It was not possible to culture specific organisms from the wound, but sections of liver provided interesting information. Well-marked dilatation of the hepatic ducts and generalized granular degeneration of liver cells were observed. Frequent areas of focal necrosis contained nests of rod-shaped bacilli which were presumably *Cl. welchii*. Sections of the kidney proved surprisingly normal; toxic changes were obvious, but no areas of focal necrosis could be detected.

Summary

In spite of careful and comparatively early treatment of a large wound, followed by the introduction of calcium penicillin, gas gangrene arose and caused death within four days.

Points of particular interest were: (1) The coexistence of toxic and obstructive jaundice. (We have never before observed displacement and kinking of the bile ducts by an accumulation of gas.) (2) The concentration of the infective process in the liver with comparatively slight renal damage. (3) The coexistence of anaerobic gangrene and gangrene resulting from vascular occlusion. (4) The fact that the patient's resistance was almost certainly lessened by frequent attacks of malaria.

We are grateful to our commanding officer, Col. R. A. Stark, for permission to report this case.

Medical Memoranda

Carotinaemia in the Tropics

The first record of carotinaemia in the Tropics was that of Sequeira (1936), who diagnosed the condition in two Europeans resident in East Africa. They had a marked yellow discoloration of the skin of the palms, the palmar aspects of the fingers, and the soles and heels. The clinical diagnosis was corroborated by the pathological findings. A careful investigation of their diets failed to reveal any cause for the condition. In the same paper there was reported the occurrence, in a male adult of the Muganda tribe, of a similar yellowish discoloration of the skin of the palms and soles. The diet of this African was also investigated, and was found to be the normal native diet, consisting mainly of plantains. On clinical grounds it appeared to be a case of carotinaemia, but it was not possible to test the blood serum for carotene.

A further five cases, all in Europeans—two from Kenya, two from Nigeria, and one from India—were described by Manson-Bahr and Ransford (1938). In all five the carotene pigment was demonstrated in the serum. In none of them was there any definite evidence of excessive consumption of foods with a high carotene content. Four of the cases gave a history of intestinal infection, and all were distinctly below the normal standards of health. The authors state that they had never observed carotinaemia among perfectly normal individuals who had returned after prolonged tropical residence. This condition of physical impairment with carotinaemia is directly contrary to the experience, in England, of Almond and Logan (1942), who found no evidence of ill-health among their cases.

CASE HISTORY

In 1943 a Grenadian planter aged 45, of African descent, medium brown complexion, was sent to me for an opinion as to the cause of his condition, provisionally diagnosed as atypical jaundice. He stated that for approximately 10 years he had suffered from a persistent yellow discoloration of the hands and feet; apart from that his health had been excellent. He was residing in a malaria-free district and had not had an attack of malaria for over 20 years.

The palms of the hands showed a marked orange-yellow tinge; this was less noticeable, though still plainly evident, on the palmar aspects of the fingers. A considerable degree of discoloration was present on the soles of his feet. The sclerotics were clear, the urine normal, and the blood pressure 120/80. On general examination nothing abnormal was noted beyond a faint suggestion of an orange tinge in the skin, particularly that of the face. This very slight alteration in colour, combined with the natural degree of pigmentation, gave him an appearance of good health far above the average. On being questioned with regard to his diet he said that he was particularly fond of papaw, of which he consumed from 3 to 5 lb. daily. Miller and Robbins (1937) estimated that papaw (*Carica papaya*) contained, on the average, 2,500 international units of vitamin A per 100 g. of edible material.

The three-layer test was applied in which equal quantities of serum, alcohol, and petroleum ether were shaken up in a test-tube and then left to settle. Lipochromes were found to be present in abnormal amount, since the top layer had a strong yellow tinge. Greene and Blackford (1926) stated that this positive result was pathognomonic of carotinaemia.

I am indebted to Dr. J. Whiteman, D.M.O., Grenada, for bringing this case to my notice.

E. COCHRANE, M.D., D.P.H.,
Senior Medical Officer, Grenada.

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Two Cases of Erysipeloid treated by Penicillin

The administration of sulphonamides is generally very effective in the treatment of erysiploid. The response to treatment by penicillin would appear to be prompt and rapid.

CASE HISTORIES

Two Army cooks, aged 42 and 34 respectively, were cutting up a carcass of fresh veal; one already had a small non-infected abrasion of the left ring-finger, the other cut his left middle finger during the process. Inflammatory swelling of the affected fingers began around the sites of trauma on the following day, being accompanied by sensations of stiffness and aching. On the eighth day of the illness the clinical picture in each patient was almost identical. The whole of the affected fingers including the knuckle and a small area of the palm of the hand, together with the contiguous sides of the proximal phalanges of adjacent fingers, was the site of a slightly tender bluish-red erysiploid. A firm margin to the swelling could be traced, and flexion of the affected fingers was minimal and painful to perform. The epitrochlear and axillary glands were not clinically enlarged, and there was no constitutional disturbance.

Sodium penicillin was given intramuscularly—15,000 units as the initial dose and 15,000 units 3-hourly until totals of 485,000 units and 560,000 units had been administered. In each case after 24 hours the swelling had markedly decreased, flexion of the finger was easier, and the aching sensation and tenderness had practically gone. On the third day penicillin therapy was stopped; the definite edge of the swelling could no longer be detected, and flexion of the finger was almost complete. By the fifth day there remained only a slight discoloration of the skin over the affected area, and a collar of desquamation of the epidermis around the small traumata which had been the original entry points of the infection.

I wish to thank Col. T. F. Arnott, O.B.E., T.D., R.A.M.C., for permission to publish these notes.

G. A. HODGSON, D.M.,
Major, R.A.M.C.

Sir Farquhar Buzzard visited Leeds on March 16 for a meeting of the Provincial Hospitals Regionalization Council of the Nuffield Trust, held at the General Infirmary at Leeds. The Council had previously had a number of consultations with representatives of the voluntary hospitals, meeting the Lord Mayor of Leeds, members of the City Council, and others concerned with the co-ordination of hospital services. A report was made to the Council in regard to the development of two joint bodies in furtherance of the co-ordination scheme with which the Trust is associated. The first of these is in Gloucestershire, Somerset, and Wiltshire; the second concerns the formation of a joint body for the Essex area; they will receive and consider reports of the surveys of hospital services in their areas. The Council was addressed by Mr. William Gissane, clinic director and surgeon-in-chief of the Birmingham Accident Hospital.