FIELD TRAINING—RIVER CROSSING.

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The objection put forward to many forms of Field Training at present being practised by Field Ambulances is that ropes and other materials used are not G. 1098 equipment and would not be available in action. This objection of course does not carry any weight because a unit called on to evacuate casualties up a cliff or across a river must have rope and must obtain it through R.E. sources when the task is set.

The following improvisation, however, does answer the criticism to the extent that G. 1098 equipment only is used and, though the length of material limits the crossing to one of a small river only, it may be found useful to demonstrate the principles to be followed when better equipment is available.

Materials required.
- Two 120 feet lengths wire, galvanized.
- Four Stretchers.
- Two Sandbags.
- Two 18 inch poles of hard wood.

The sketch shows the method and a short description only is required in explanation.

The wire is carried across the river, suspended between erected stretchers and tightened by use of Spanish Windlass. The method of securing the end of the wire in the absence of trees or other suitable fixed objects is to tie the wire round a filled sandbag or strong stake buried in the ground to a depth of about 2 feet.

The stretchers are used double to ensure security, opened at the lower end and closed at the top. The lower handles are embedded for stability and to prevent slackening of the wire when weight is taken.

The actual method of carrying the stretcher across has been previously described and is shown in the sketch.

One length of wire alone is sufficient to bear a patient but two are used for safety.

NOTES ON INFECTIVE HEPATITIS IN MALTA, 1938–1942.

BY COLONEL H. B. F. DIXON, M.C.

Since jaundice became notifiable in the Army, i.e., in 1932, small outbreaks have been recorded in Malta, invariably in the autumn and winter. As the garrison increased the number involved grew larger. New troops on the island were most liable to attack. The outbreaks occurred in different parts each year until the garrison reached its final strength when the disease appeared universally all over the island. As all non-immunes became infected and no fresh troops arrived the number of cases grew less in the last year of the siege.

ÆTILOGY.

Seasonal Incidence.—The incidence was greatest from August to February with the peak in November, the epidemic dying out in the spring. A definite parallelism with gastro-intestinal infections was noted, the epidemic of jaundice commencing a month later.

Race Incidence.—The disease was practically confined to British troops, the incidence among Maltese troops being negligible.

\[
\text{British troops 1938 } 1.14 \text{ per 1,000. Maltese nil.} \\
\text{1939 13.87 } \text{ 0.24 per 1,000.} \\
\text{1940 11.53 } \text{ 0.71.}
\]
Clinical and Other Notes

The figures for later years are not available but the ratio was the same. No epidemic of jaundice was noted at any time among the Maltese civilians.

Sex Incidence.—Infective hepatitis was uncommon among women in Service families.

<table>
<thead>
<tr>
<th>Year</th>
<th>British women</th>
<th>Maltese women</th>
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<tbody>
<tr>
<td>1938</td>
<td>nil</td>
<td>nil</td>
</tr>
<tr>
<td>1939</td>
<td>1.92 per 1,000</td>
<td>1939</td>
</tr>
<tr>
<td>1940</td>
<td>3.98</td>
<td>1940</td>
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Age Incidence.—It was rare under the age of ten, being most common among young adults. Older soldiers appeared to be immune although many gave no history of having had jaundice.

Occupational Incidence.—No occupation or employment was exempt though cooks and officers gave a specially high percentage of cases. At one time there were eight officers from one battalion in hospital with jaundice. The incidence in 1940 among officers was 40 per 1,000.

Incubation Period.—The incubation period was usually three to six weeks with a minimum of three weeks.

Infectivity.—The disease was considered to be infectious as, in many cases, it was possible to trace fairly close contact with a patient who had subsequently developed the disease. Thus it occurred among husbands and wives, parents and children and men from the same billet, platoon, etc. On one occasion a stretcher-bearer course was held. Men from all parts of the island attended who had no contact with each other before or after the course. Two days before it ended one developed jaundice. Six weeks later four other men who had been with him on the course developed the disease. They had not seen him since.

Duration of Infectivity.—The duration of infectivity was for only a short period before the appearance of jaundice—probably two or three days. This was suggested by the absence of cross-infection in medical wards where patients were admitted once jaundice was diagnosed whereas there were several cases of cross-infection in surgical wards where they were admitted in the pre-icteric stage for supposed acute abdominal conditions. These cases of jaundice occurred among nurses, orderlies, and patients in adjoining beds.

Transmission.—Infective hepatitis was thought to be transmitted by droplet infection and close contact, most likely by healthy carriers and carriers in abortive and subclinical attacks, e.g. “Malta tummy.” No insect vector was incriminated although in Malta the incidence is during the sandfly season, May to November, and the fly season is from May to October, the same period as the seasonal incidence of jaundice.

Causal Agent.—In spite of there being no positive proof the disease was considered to be a virus infection for the following reasons: (a) The long incubation period; (b) the picking out of odd cases from a billet, a beach post, a platoon; (c) the occurrence of subclinical attacks; (d) the fact that one attack protected.

Immunity.—One attack appeared to protect. In families and troops living in close contact cases were noted though any who had had jaundice never developed a second attack.

Subclinical Attacks.—Subclinical attacks were common. Out of six men in a post one might report with jaundice, another with indefinite gastro-intestinal symptoms, another with diarrhoea. Men who became jaundiced as a rule had not been in hospital previously with gastro-intestinal symptoms. Attacks of jaundice were frequently preceded by tonsillitis six weeks earlier. One patient, thought to be suffering from jaundice, was kept in hospital for fourteen days but no bile appeared in his urine. He was let out for Christmas, “beat it up,” and filled himself with alcohol and food. He returned to hospital on Boxing Day with severe jaundice. It is possible that the local gastro-enteritis, “Malta tummy,” may be a subclinical attack.

N.A.B. Jaundice.—There were very few cases of jaundice following treatment with N.A.B. but there were very few syphilits on the island. In the few cases which occurred there was no clinical difference between them and the ordinary case.
There were two types, afebrile and febrile.

(1) The afebrile type was symptomless except that the patient may have felt a "bit off colour" or "livery" for a few days with slight loss of appetite. He had not gone sick and would not have reported had not he noticed his urine was very dark or someone had told him he had the "yellow jaundice." There was no fever, pain or abdominal symptoms. The liver might be enlarged.

(2) The febrile type closely resembled sandily fever. There was even the pain in and behind the eyes. Some cases started with nasopharyngeal catarrh; in a few bronchitis was the first symptom; in some the symptoms suggested enteric fever. Patients sometimes were discharged from hospital after what was thought to be sandily fever and returned the next day with jaundice. Pain occurred in the abdomen, sometimes in the centre of the epigastrium, sometimes in the right iliac fossa, though more commonly in the right subcostal region. Cases have frequently been admitted to surgical wards as appendicitis or Bact. coli pyelitis. Liver and splenic enlargement were not marked in Malta. Usually on the fourth or fifth day a patient, who had been running a temperature of 99·2°, perhaps up to 102° F., found that jaundice had appeared and that he felt definitely better. The pyrexia then ceased and the jaundice gradually increased in intensity, reaching its maximum about the twelfth to fourteenth day from the onset of the illness, then gradually decreasing. The urine generally became free of bile on about the twenty-first day. The jaundice disappeared shortly after, being usually clear on the twenty-eighth, but in some cases it remained much longer, even as long as seventy-two days. The febrile type was most common in officers.

An appreciable number of cases of infective hepatitis ran a much longer course with gross enlargement of the liver, persistent jaundice and very slow recovery.

Bile could usually be detected in the urine one or two days before the jaundice appeared. Bradycardia was marked as soon as jaundice appeared. Pruritus was rare. There was much depression until the jaundice had disappeared. There were no cases of hemorrhage even in the severe attacks.

The disappearance of bile was not considered to be a sufficient criterion of cure for in many cases the liver was found to be enlarged after the urine was bile-free. To get these patients out and about on ordinary diet too soon was to invite a relapse. The various chemical tests were not of great value, clinical judgment alone being the safest criterion of recovery. When all biliuria and icterus had disappeared, when the liver and spleen were normal in size, and the patient free from symptoms and gaining weight, then only was he considered fit for discharge. Moreover he had to go slow for at least a fortnight and avoid alcohol for at least three months. On the whole cases were much less severe than those seen in the United Kingdom.

Recurrences.—Recurrences occurred in less than 3 per cent of cases in Malta. They were usually worse than the primary attacks and generally the result of dietetic or alcoholic indiscretions.

Mortality.—The mortality was negligible—less than 2 per 1,000 in Malta. Several patients were very ill but all recovered.

Pathology.

Laboratory Investigations.—All laboratory investigations were negative or inconclusive. A certain proportion showed definite evidence of secondary anemia. Reduced Hb. and R.B.C.s with C.I. less than one. W.B.C. slightly subnormal with relative lymphocytosis, never leucocytosis with polymorphonuclear increase.

Diagnosis.

Early diagnosis was possible by observing bile in the urine, frequently forty-eight hours before jaundice appeared. All men reporting sick with any gastric symptoms during an epidemic of jaundice should have their urine examined.
Clinical and Other Notes

PROGNOSIS.

The prognosis was good. No complications or after-effects were noted provided the patient kept off alcohol.

TREATMENT.

Patients were treated on a fat-free diet with high carbohydrate and high protein content and kept in bed until the urine was free from bile. Otherwise treatment was symptomatic. The stay in bed was usually twenty-one to twenty-eight days, but in severe cases up to three months.

OFFICE OF FOREIGN RELIEF AND REHABILITATION OPERATIONS.

The Office of Foreign Relief and Rehabilitation Operations has reported on activities of medical personnel attached to its North African Mission and outlined the nature of its preparations for health and medical measures in future relief theatres.

O.F.R.R.O. medical personnel have had a variety of duties. A principal task since arrival of the O.F.R.R.O. mission early in 1943 has been technical assistance to French authorities in estimating and adjusting to available supply requests upon Lend-Lease for drugs, medicines and other medical supplies.

Development of the North African campaign made health and medical problems less complicated than had been anticipated. It had been feared that the severe bombardment of Axis forces in Tunis might create a serious health problem through destruction or damage to the water supply and sewage disposal systems of the city. Yet, so precisely had Allied bombers concentrated on the harbour area that only minor damage of this type occurred in the city and fears that typhoid and dysentery might become serious in Tunis and spread to other areas were promptly dissipated by rapid repairs effected by military engineers. Likewise, typhus, the louse-borne disease which readily assumes epidemic form in the uncleanliness of battle conditions, had been feared because it was known that only the year before (1942) there had been close to 25,000 active cases in the region. Yet, in 1943, only a few scattered cases were reported in all of Tunisia. It was assumed there would be some damage to hospital facilities but in Tunis the hospitals were found intact with 1,000 empty beds. Although some of the other Tunisian cities, such as Bizerta and Sousse, had received rougher treatment, the public health officers reported in general after the campaign that health conditions throughout the area were normal in virtually every respect. Captured atabrine was on hand for the malaria cases and sulfa drugs were made available from military stores to make good the two most serious deficiencies in medical supplies. First-aid stations for air-raid casualties were found to be adequate.

Because of its bearing in the future on health problems created by airplane traffic, a programme of great interest initiated by the health officers in North Africa is the de-insectization of airplanes entering the region from outside points. Several potentially dangerous diseases, now more or less localized, can be carried from one portion of the world to another by insects in airplanes. The problem is being met in North Africa where, with O.F.R.R.O. assistance, considerable progress has been made in developing techniques to neutralize the danger that disease might be spread by such means.

To meet varying conditions in prospective relief theatres, several different types of packaged units of medical supplies are being assembled under the direction of Dr. Crabtree for immediate shipment to any area of need. One is a basic Emergency Unit comprised of the minimal medical supplies required for the control of the more common diseases of worldwide occurrence. This unit is designed to care for the needs of a population group of 100,000 people for a period of one month and includes some 150 items considered by expert authority to represent an irreducible minimum for basic medical needs. Multiples of this unit can be immediately shipped into any area of medical relief activities during initial stages of operations. Secondly, plans are being made for a larger Standard Unit of supplies made up of the