AN ACCOUNT OF THE MEDICAL SERVICES OF THE NATIONAL LIBERATION ARMY OF JUGOSLAVIA AND OF THE R.A.M.C. ASSISTANCE GIVEN TO IT.

By Colonel J. W. Hirst, O.B.E., T.D.

[Received February 1, 1945.]

"Travellers, like sea trout, should be caught fresh run, with their experiences still sticking to them."

(Kipling)

I.—JUGOSLAVIA.

Many new problems for the Allied military medical services have arisen with each successive year and campaign since 1939. Careful planning or rapid improvisation on the spot has, as a rule, provided solutions for each new set of circumstances. From this welter of experience, military medicine has evolved to what is now seen to be a reasonably good copy of modern scientific medicine. But the difficulties inherent to expeditionary force medicine, such as movement, supply, terrain and water supply (to name only a few), will always prevent the copy being perfect. Great as were the difficulties to be overcome by the Army Medical Services in the Western Desert, East Africa, New Guinea, Burma and Normandy, the Allies were never without the bare bones of essential "stripped-to-the-waist" medical equipment and man-power. Never were they without such basic framework as was the National Liberation Army of Jugoslavia (NLAJ) in its early days.

(The NLAJ is Marshal Tito's (Marshal Josip Broz) regular army. The Partisans are his organized, civilian, guerrilla bands but the term has come to mean all members of his forces. The Chetniks are General Draja Mikhailovitch's followers, who in Mr. Churchill's words, "are not fighting with the Allies," but who are not regarded with such bitter animosity by the NLAJ as the Usticas (USTACHE) or Croatian Fascists.)

It is not the purpose of this article to attempt to write history or to discuss in any way Allied policy or Jugoslav politics. Yet it is necessary to tell something of the conditions prevailing in Slovenia, Croatia, Slavonia, Bosnia, Dalmatia, Serbia, and Montenegro when the British and U.S.A. forces towards the end of 1943 were first in a position to afford aid to the NLAJ in a really concrete form.

(It seems appropriate here to recall the medical aid which was rendered during and after World War I by many British doctors to Serbia. The names of four women—Inglis, Sandes, Hartley and McPhail—are remembered but there were many others, men and women.)

Jugoslavia was only so christened in 1929 but had been brought into being in December, 1918, as the "Kingdom of the Serbs, Croats and Slovenes," by an amalgamation of the provinces named in the preceding paragraph. To weld such a mixture of races, laws, habits and territories into staunch national unity in a matter of twenty disturbed years would under any circumstances have been a gigantic task. It did not happen and, as is known, the country was over-run by the Germans in the summer of 1941, resistance being maintained only by the Chetniks and the Partisans, both independently adopting guerrilla tactics in the mountains. Quislings in Croatia and Serbia were established with German and Italian aid. For many subsequent months civil war ravaged the country. The position was made worse by the fact that the two anti-Axis forces became opposed also to one another. By the end of 1943, the Chetniks had virtually ceased all opposition to the invaders, but the NLAJ had grown to number 250,000 and had been able to obtain much equipment from the Allies and
from Italian Eastern Adriatic garrisons when Italy collapsed. To control the country, the Axis powers had at this time to maintain a garrison of some twenty German and other enemy divisions.

As a result of the invasion and civil war, millions of people were driven from their homes as a direct result of warfare or lack of food, general insecurity and harsh decrees made by the Germans in the interests of Lebensraum; others were deported for work in the Reich and her satellite countries. The average income per head of population was about £15 a year. Agricultural production had fallen by at least 50 per cent since prewar days. The death-rate had soared; the birth-rate had decreased; infant mortality and stillbirths had reached fantastic figures—in parts of Dalmatia 80 per cent of births were stillbirths. Transport by road or rail was so precarious that most of the population depended for food, clothing, footwear and fuel on what little they could produce themselves. Out of 650 railway stations in Croatia, 500 were burnt down. Rickets, tuberculosis, typhus and vitamin-deficiency diseases were rapidly increasing, mainly owing to widespread malnutrition. Medical supplies of all sorts were scarce, in particular such essentials as blood-grouping sera, anaesthetics, antiseptics, X-ray apparatus and the sulpha drugs.

Bosnian rakija—a poor kind of brandy containing at the most 18 per cent of alcohol—was a common substitute for surgical spirit. Most leg and thigh wounds were splinted with wood—home-made Diterix splints were popular, being easily made, adaptable in size and length and conveniently carried by medical personnel. Enemy medical stores were great prizes. Actions were fought by the NLAJ not to exterminate the enemy or to deprive him of territory but to capture a few pounds of salt or other vital munition. Small quantities of Allied medical stores, including morphia, plasma and vaccines were delivered at times—usually by air.

The position with regard to doctors, nurses and trained nursing and hygiene personnel was equally bad. There were only 6,000 registered doctors in Jugoslavia in 1939—about 1 to every 2,600 inhabitants. When the enemy over-ran the Balkans in 1941 such personnel suffered extremely heavily. Doctors had to flee as refugees or face death, imprisonment or deportation. Those who elected to share the hardships of guerrilla warfare with the Partisans experienced unbelievable trials and risks. Since the NLAJ had no "rear" or fixed base, patients, medical staffs and stores were compelled to move whenever the brigades or divisions moved and travel the same mountain tracks under the same conditions. This was due to the fact that for over two and a half years the NLAJ was unable to hold for any length of time a town containing a large civilian or military hospital building. The Germans seemed to have made a special point of destroying hospitals, or any other buildings capable of being used as such, which were not located in a town, e.g., the central state hospitals in Montenegro and East Bosnia and the children's hospital on the River Piva were so destroyed. The wounded were never abandoned. Many battles such as those of the Prozor, Neretva and Praca were fought to prevent a hospital with its wounded falling into enemy hands. Such tactics were forced upon the NLAJ because the enemy on many occasions slaughtered all the patients and staff they captured before destroying the hospital. Under such circumstances the wastage of trained medical personnel, scanty to begin with, was enormous. A brigade had one doctor if it were lucky, and the divisional hospital (bolnica), which is similar to the British C.C.S., possibly four. Most of the "front-line" and first aid work was necessarily left to the troops themselves or to the battalion medical orderlies, a great many of whom were women. It occasionally happened that the sick and wounded could be left behind, well hidden in caves, attics and cellars, in the secret care of villagers, whilst the army withdrew into the mountains.

(An old peasant woman acquired a wide reputation in the NLAJ by amputating a leg in twelve minutes with household tools without an anaesthetic.)

Such was the economic and medical picture in the NLAJ towards the end of 1943. Yet in 1939, Jugoslavia, a country somewhat larger than Great Britain, with a population (16,000,000) approximately numbering that of Turkey, had the same railway track mileage per head as Great Britain, had as many motor cars proportionately as Ireland or Poland and
had an export trade equivalent to Denmark. In many ways, including medicine and hygiene, Jugoslavia was however years behind Germany, France or Great Britain. But the country had reached the transition period of the industrial evolution and, despite inefficient governments and officials, much progress was being made.

The conditions therefore under which the NLAJ had to continue its patriotic struggle were comparable with few in the history of the world. The soldiers were fighting week after week—guerrilla actions for the most part amongst snow-covered mountains—with a spirit of selflessness almost beyond previous imagination, for no pay, with hardly any training, with no tanks, no heavy guns and no air force, and grossly deficient of arms, ammunition, equipment, food, transport and medical services. Hyperpatriotism smacks of Hollywood blubs but is the only word which seems adequate to describe the inspiration, the glowing spirit of resistance, for freedom of their country, which bound Tito's forces together with an unconquerable strength and unity, such as the country—previously notorious for internal divisions—had never possessed. There is no doubt also that the occasion produced the man in Marshal "Tito" himself. Political hatred and aims, revenge and self-preservation were, and are, subsidiary questions to the NLAJ and their leader, until Jugoslavia shall have been liberated from her enemies. It must be a thought which has occurred to many onlookers of the recent Jugoslav scene that the wanderings and struggles of the NLAJ will provide one more example for history of how invasion and threat of extinction can produce national unity in a country previously divided against itself.

This spirit and the high level of comradeship frequently raised the question by the badly wounded of euthanasia. They did not wish to prejudice the success of the battle and be a nuisance. Such proposals were turned down invariably by the doctors and the entire army.

20 to 30 per cent of the NLAJ were female. Matrimony and pregnancy would have interfered with military necessity and freedom of movement. Marriages were therefore forbidden by Army Orders. The sexes lived, worked and fought together with a complete disregard of sex. I have only heard of one marriage being permitted and that was between a couple who were about to be separated owing to the fact that the man, besides having had a wounded leg amputated, had contracted pulmonary tuberculosis and was to be evacuated by air to a Black Sea Sanatorium.

Similarly, venereal disease would have proved a hindrance to the NLAJ and in any case there were no means of affording treatment. So Army Orders forbade the NLAJ incurring the risk of contracting VD. And the order was obeyed. Amongst the thousands of casualties received in Italy from the NLAJ not a single report of primary VD contracted in Jugoslavia was made.

Innumerable examples of endurance and fortitude amongst the medical staffs could be recited. A few must suffice:

(a) The stretcher bearers of one divisional hospital (1st Proletarian) within the space of a few weeks carried all their patients, sometimes on their backs, sometimes on stretchers, three times across the great gorge of the River Tara, once across the canyons of the Rivers Piva and Suteska and later across the almost impassable Maglic Mountains. Many of them in consequence had pressure sores extending in depth to the clavicle and acromion.

(b) A well-known surgeon of the NLAJ worked and marched bare-footed for ten weeks in 1943, during which he averaged six operations a day (five without anaesthetics) and 20 miles, being frequently bombed and usually hungry.

(c) So many idealistic female nursing orderlies were killed succouring the wounded in the front line that orders restricting their ardour had to be issued.

(d) A bath-house with 20 showers was improvised in a village which had no pump, no running water, no pipes and no coal or oil.

Instances of the same spirit amongst the wounded appear later in this account.
The chain of evacuation for casualties in the NLAJ is shown in the following diagram. It must be pointed out that this organization was not considered ideal, but was dictated by the shortage of medical officers and surgical equipment.

**KEY.**

- Company aid post (cetna previjalista), male or female nursing orderlies.

- Battalion aid post (bataljonska previjalista), with experienced male or female nursing orderlies in charge.

- Brigade aid post (brigadna previjalista), with one medical officer.

- Divisional Hospital (divizijska bolnica), with 4 or 5 medical officers, divided into medical, surgical, infectious and convalescent departments: differs from usual military hospital by having a large "hospital company" of bearers attached to render it mobile in the absence of any transport or ambulances.

- Divisional surgical equipment (divizijska kirurska ekipe), part of which is sent forward to brigade level when circumstances necessitate a brigade acting independently or when it is possible for patients to be held at this level.

- Brigade hospital (brigadna bolnica), the surgical team of which carries out triage, holding and treating according to circumstances. It is called "brigadna triazna stanica" and resembles the British F.D.S.
Towards the end of 1943, the Allies being then in possession of some 250 miles of the Eastern coastline of Italy and having Naval and Air control of the Southern two-thirds of the Adriatic Sea, R.A.M.C. officers were sent to Tito's headquarters to join Brigadier MacLean, Major R. Churchill and others of the Allied Military Mission to the NLAJ. They were able to help by undertaking surgery (especially Major L. S. Rogers) and by arranging more certain methods of ensuring the arrival of essential medical supplies. But at this time of the year good flying days were few, no harbours on the mainland or Dalmatian Islands were free of Germans, and most of the mountainous parts of Jugoslavia—those held by the Partisans—were under deep snow. It was only possible, therefore, during some months of the winter of 1943-44 to render medical aid to the NLAJ by dropping from time to time light-weight supplies from the air and by occasionally running stores in small craft which on the return journey evacuated a few wounded. Until the end of March, 1944, a company of a British Field Ambulance at Grumo Appulia near Bari was capable of caring for all the NLAJ casualties reaching Italy, numbering at the most 300 or 400. As this hospital grew the British staff was reinforced by Yugoslav personnel who were collected in various ways. Some of the doctors who arrived at Grumo were old and unfit, others were women, others were convalescent from wounds or sickness, others were refugees, others released or escaped prisoners of war. Some had been in Italy and elsewhere, some were civilian refugees from Jugoslavia, some had been serving with Tito. Similarly a female nursing staff was got together. This involved the creation of a Nurses' Training School at Grumo to which selected young women, Partisans or civilian refugees, were sent to be trained by the few with previous experience in nursing. A Jugoslav woman doctor directed the training which included general education as well as theoretical and practical nursing. The course lasted four months or more, according to the individual progress made, at the end of which the female nursing orderly was sent into the wards at Grumo, or to the NLAJ at the front (via a NLAJ training centre in Italy), or at a later date to one of the other hospitals admitting NLAJ patients. Selected women and a few men were also given special training at various British hospitals in such subjects as operating theatre work, maxillo-facial, neurosurgical, orthopaedic and psychiatric nursing, clinical pathology and radiology. The language difficulties were great; and also the absence of textbooks proved an obstacle until the Partisans' educational bureaux provided cyclostyled translations of English textbooks. This nurses' training school at Grumo proved to be successful in assisting to solve many problems created by shortage of personnel. It is one of the things which it is thought will cause the name of Grumo Military Hospital to become well remembered in Jugoslav history.

(Civilian Jugoslav refugees, men, women and children, often arrived in these early days—and continued for many months to do so—by the same means as NLAJ casualties, irrespective of whether or not they were wounded or sick, their care was not an R.A.M.C. responsibility. A special department of the Allied Control Commission (AMG) known as the Internees and Displaced-Persons Sub-Commission was nominally responsible. But it happened frequently that distinction between civilians and Partisans was impossible, especially on an airfield at night. Moreover the IDPSC was never staffed to deal with the major surgery required for many of the wounded civilians—usually bomb wounds. In time therefore the military hospitals at Grumo and elsewhere began to contain badly wounded civilians of both sexes and all ages, although not in very large numbers.)

For many weeks at the beginning of 1944, aircraft could not land on the two or three landing grounds available in NLAJ territory. But with the improving weather conditions in April and May, more medical help was immediately forthcoming for the NLAJ. Larger shipments of medical stores, vitamin tablets and food were sent across the Adriatic. The R.A.F. made such excellent evacuation arrangements both in Jugoslavia and Italy, in spite of the continually changing military uncertainty as to the security of the landing grounds in Jugoslavia due to enemy action, that by June, 1944, an average of 100 casualties per night were being evacuated by plane to Italy, of whom roughly 60 per cent were from the NLAJ.
The nightly flow of casualties so received was uneven varying from 18 (one plane load) to 1,060. The R.A.F. pilots had to seize any suitable opportunity which offered to get as many casualties out of Jugoslavia as, and when, they could, although there was an undertaking to limit the numbers to 250 on any one night if possible. When larger numbers were received, sometimes without notice, it was exceptional for the required number of hospital beds to be available immediately. It became, therefore, necessary to establish a semi-medical camp for the latter type of patient, who was obviously a hindrance to the NLAJ field army. A camp, centred round a small requisitioned village, was established for this purpose with Jugoslav medical officers and a skeleton British administration; it grew until eventually it could accommodate 4,000.

A small British forward base, primarily to serve the needs of the Allied forces assisting the NLAJ, was established early in 1944 on the island of Vis (Lissa). Part of a British Field Ambulance with a surgical team was sent there and at a later date a British Field Hospital landed. These medical units were able to afford considerable help to the NLAJ forces not only on Vis but also to NLAJ casualties from the adjacent islands and mainland.

The NLAJ was immunologically unprotected. The Jugoslav patients arriving in Italy were for the most part dirty, verminous, half-clad in rags and cachectic. Cases of typhus and typhoid fevers were known to be common in Jugoslavia. Outbreaks of these diseases were therefore to be feared in the hospitals and camps in Italy. Arrangements were made that all NLAJ casualties should receive the first dose of typhus vaccine (and also TAB, if fit) and be disinfested within twelve hours of landing. If, in the early days of the transportation of Jugoslav casualties to Italy, it had been realized what numbers this would eventually involve a large disinfestation centre would have been built and a staff provided on the receiving airfield so that the hospitals might have been spared the work. By the time the need for such a central disinfestation centre had been appreciated, it was too late and all receiving hospitals were compelled to make their own disinfesting arrangements with consequent multiplication of equipment, buildings and staff. That the piecemeal measures taken however were successful is shown by the fact that up to the end of August, 1944, no case of typhus amongst the NLAJ casualties arose after the period of incubation had expired. About fifty NLAJ patients developed typhus in hospitals in Italy after air transport, usually eight to ten days after arrival. The transport of the thousands of casualties, almost invariably louse infested, by air from Jugoslavia to an Italian airport and thence by road to hospitals and camps called for great care in the disinfestation of the air and motor ambulances, and of the blankets and stretchers used, and in the protection of the personnel dealing with the transport and reception of the patients. The disinfestation of patients was carried out when possible by hot baths, shaving and the issue of fresh clothes. But this could not be done with the badly wounded whose limbs were encased in plaster under which lice flourished in hundreds. Anti-louse powder (AL 63) insufflated under the edges of the plaster was used at first but was found to irritate and not kill the lice. Later 5 per cent DDT—95 per cent talcum powder—was used in all such cases with great success. Up to the time of writing DDT was unfortunately not available in sufficient amount for use in disinfesting all Jugoslav casualties. If it had been available from the first, the cutting of the female casualties' tresses could have been avoided. British medical units in their disinfesting enthusiasm did not realize the significance of a shorn head in a woman at that time and their methods were decidedly unpopular with the Partisan women.

The air evacuation of the large numbers of casualties from Jugoslavia demanded many more hospital beds for their reception. Several British General Hospitals and Casualty Clearing Stations (and one South African General Hospital) were nominated to receive NLAJ patients. Some admitted NLAJ patients only; others admitted special classes of Jugoslav patients whilst continuing their normal C.M.F. admissions. By the end of August,
1944, approximately 4,000 British Hospital beds were in use for the NLAJ. These were entirely staffed by the R.A.M.C. The units forming this total were in some cases already in Italy; others were brought from Egypt, North Africa and Malta. In addition Grumo Military Hospital had expanded to 1,200 beds, having been given a small R.A.M.C. War Establishment of its own, and had budded off a branch, a 500 bedded sanatorium, for the many cases of pulmonary tuberculosis amongst the Partisans. During August, 1944, a second Jugoslav military hospital of 400 beds was opened; like Grumo Military Hospital this had mainly a NLAJ staff but was administered and assisted by a small R.A.M.C. detachment. Lastly, a 1,000 bedded Jugoslav Convalescent Depot had been established and was attached for administration to a British Convalescent Depot. Although by this time approximately 7,000 beds had been provided for NLAJ patients in Italy, in addition to the semi-medical camp, the pressure for beds was great and it was made greater by the high proportion of "long-term" cases for whom there was no evacuation to an overseas base by hospital ship as for corresponding British or other Allied patients.

Jugoslav medical officers and nursing personnel in Italy were controlled by a Jugoslav Medical Mission who worked in close touch with the R.A.M.C. authorities. 30 to 40 NLAJ medical officers were usually available for posting to the various hospitals and for varying periods of attachment for the study of some specialty or for a refresher course in modern methods. Jugoslav hospital orderlies of all grades reached 350 females (including those at the Grumo Training School) and 450 males by August.

For the R.A.M.C. personnel engaged in working for NLAJ patients the task provided was one which gave satisfaction to all, not only because it was so clearly of great help to the Allied war effort, but also because from the medical standpoint the cases were often of completely different types from those previously encountered in their Army service.

III.—PATIENTS.

There were many ways in which the medical care of the Jugoslav patients reaching the R.A.M.C. in Italy provided interesting, novel and thought-stimulating problems. Their nature will only be indicated in a general manner here. No doubt much detail will appear from other hands out of the clinical material so abundantly available.

It is probable that the outstanding fact which registers with all medical officers who have treated Jugoslavs is the rapidity with which a seriously ill or wounded Partisan recovers. Once the treatment or operation was over, convalescence was shorter by far than expected. A condition which in a British officer or soldier might be anticipated to lead to a period of six months in hospital and convalescent depot and on light duties at the base or L. of C. frequently recovered completely in a Partisan in half the time. Presumably this was due partly to racial stamina and partly to the Partisan, usually a peasant and a mountaineer by upbringing, having been toughened by months of hard campaigning. An impression that pain was less felt by the NLAJ soldier than the British must also have been recorded by many observers.

(A small Jugoslav motor schooner escaped from the neighbourhood of Split in December, 1943, crammed with civilian refugees and arrived unexpectedly at Manfredonia at night. Amongst the women were five in the last week of pregnancy. One delivered herself on the open deck of the ship during the voyage; another was delivered on the open, snow-covered quay at Manfredonia. At Manfredonia there was no medical unit and no motor ambulance cars. All the refugees were therefore packed into Army "3 tonners" and taken some 60 miles to the nearest IDPSC camp. All the pregnancies were completed successfully; none of the mothers saw any need to stay in bed more than three days.)

Throughout the war the great majority of the R.A.M.C. have treated only men of selected age and fitness. There was an unusual atmosphere, therefore, about the Jugoslav wards where there were almost no age limits and no initial standard of fitness other than ability to march. A scene in one ward is recalled where in three adjoining beds were a company "runner," aged 11, with multiple mortar wounds, a hale old man aged 76 with a comminuted fracture of
The Medical Services of the National Liberation Army of Jugoslavia

the shaft of the femur resulting from burial under a bombed house and an emaciated soldier aged 30 with septic flesh wounds and an R.B.C. count of 990,000. Women's wards were established in all hospitals receiving Jugoslavs; and here again the variety of cases afforded refreshing and extensive clinical experience, including sometimes antenatal and obstetrical work for wounded civilian women refugees. One hospital conducted a small school for children convalescent from wounds, the wife of a Jugoslav doctor acting as schoolmistress.

R.A.M.C. surgeons overseas do not as a rule see a great deal of major chronic sepsis. The few cases that do arise in British patients are "long-term" cases and are evacuated as soon as they are fit to travel for treatment by surgeons in the U.K. Delays in obtaining skilled surgical assistance together with all the other factors of warfare in Jugoslavia produced many cases of chronic osteomyleitis in the hospitals in Italy. As already explained these hospitals had to hold and treat these "long-term" cases, usually for several months. Lardaceous disease had sometimes commenced. Treatment gave only slow and often disappointing results; penicillin was useless in these cases except as a prophylactic immediately before and after the frequently inevitable amputation. Nevertheless well-planned drainage, good food, careful dressing and nursing did produce, surprisingly often, successful results with these tough soldiers—after months of purulent discharge and sequestration. At one period at Grumo Military Hospital sequestrectomy was much the most common operation entered in the operating theatre record book. Gas gangrene was very rarely seen.

One patient, whose leg was saved, had a suppurating compound fracture of the head of the tibia with retained foreign body sustained three months before arrival in Italy. During this time with inadequate fixation by improvised wooden splints he had ridden hundreds of miles on muleback with a small isolated and much harried detachment. His comrades built a platform on to the saddle so that his foot was alongside the mule's eye. At other times he used a sling and crutches. R.A.M.C. reserves of Balkan beams and crutches, usually more than sufficient, were unable for some weeks in 1944 to meet the demands for Jugoslav patients; and recourse was had to local manufacture by the R.E.

The large number of amputations for wounds and chronic sepsis introduced new problems for the R.A.M.C. by necessitating the provision in Italy of artificial limbs for Partisans, who unlike other Allied "amputees" could not be sent for the supply of prosthesis and subsequent rehabilitation to a home base. Two factors determined the action taken. The first factor which had to be considered was the high proportion of emergency amputations performed in Jugoslavia in which the operation had not been done at the site of election and which would therefore require re-amputation later. Secondly time was important; the constant pressure for beds in hospitals and convalescent depot required that the leg amputee be supplied with a prosthesis with which he could be discharged to a useful life in a non-medical unit as soon as possible. The supply of modern type artificial limbs, even if it had been possible, would have been wasteful and time-consuming. The Consultant Surgeon, A.F.H.Q., therefore, arranged that a small limb-making centre, with British and Jugoslav personnel, should be established to make and fit simple wooden peg-legs with leather and metal buckets and webbing straps, aiming at an output of one per diem. The order was a "tall" one; at one time there were more than 100 Jugoslav personnel awaiting the supply of an artificial leg. The supply of artificial arms and hands was not undertaken unless both hands had been lost. This limb-making centre was established at the Jugoslav Convalescent Depot where the amputees were collected and where the limb fitting and rehabilitation could be supervised by the Specialist in Physical Medicine and the visiting Orthopaedic Surgeon of the adjacent British Convalescent Depot.

The physicians were not less well provided with interest than the surgeons. Almost every surgical case amongst the NLAJ was also in fact a medical one by reason of the clinical manifestations—skin, digestive and nervous—of undernutrition and hypovitaminosis. The half-starved wounded Partisans on admission to our hospitals at first found the change to a British diet frequently not altogether to their liking. But they could, and did, eat bread
in enormous amounts without apparent discomfort or ill-effects. To meet their need authority was given for the normal British Army ration of 14 ounces of bread per diem to be increased to 20 ounces for Yugoslav patients. For many days after admission it was common to see them with a permanent axillary attachment of a loaf of bread. A result of this voracious appetite and rapid regaining of weight which was occasionally seen was the appearance in an acute form of an unsuspected disease, previously present though suppressed or ambulatory. Such patients, in bed, emaciated and with subnormal temperatures, suddenly developed signs of second and third week typhoid or paratyphoid fever, or a severe dysenteric hemorrhage. They caused much anxiety to the medical staffs owing to the absence of prodromata and kept the pathologists needlessly busy for a few days searching for sources of infection among the innocent staff and other patients in the ward. It was quite useless to attempt to curb the appetite of the freshly arrived Yugoslav patient—the Partisan in a British Hospital had his own ideas as to what orders he should obey—but fortunately serious results from overeating were comparatively few. It may be emphasized at this point that the Yugoslav patient reaching Italy was relatively immune to the ordinary infectious diseases. Typhoid, paratyphoid, typhus, bacillary and amoebic dysentery, malaria, kala-azar and infective hepatitis were occasionally encountered, but, with the exception of pulmonary tuberculosis, others were rare. This was particularly noticeable in the case of diphtheria by contrast with its common occurrence in British troops. There is no doubt that the hygiene sections of the NLAJ did excellent work in diminishing intestinal infections which in pre-war days had been endemic in many parts of Yugoslavia.

Pulmonary tuberculosis, however, was a different story. In this case the R.A.M.C. was not in ignorance of existing conditions and what to expect. For many years before the war mortality and morbidity from pulmonary tuberculosis in Yugoslavia had been notoriously heavy. The figure of 150,000 to 200,000 cases of active pulmonary tuberculosis in Yugoslavia in 1939 has been given by one Yugoslav doctor. Before the invasion of Italy, many cases of tuberculosis amongst Yugoslav refugees in Egypt and North Africa had been diagnosed and by March, 1944, some fifty such patients had been collected in a hospital in Malta. Before large-scale air evacuation of NLAJ casualties to Italy commenced, Marshal Tito's Headquarters informed the R.A.M.C. that at least 250 cases of pulmonary tuberculosis were awaiting evacuation. It was apparent that a special hospital would be required for this disease. A suitable and conveniently situated site was not easily found in S.E. Italy, nor was an existing Italian sanatorium available. Eventually a large village elementary school with additional tented wards for ambulant cases was converted into a "makeshift" sanatorium for Yugoslavs. Two able Yugoslav doctors (Niebauer and Janovic) were available as senior medical officers and they, with other Yugoslav medical assistance and with a small British administrative staff, conducted a 500 bedded Sanatorium—for pulmonary tuberculosis only—with surgical, X-ray, and APT facilities, which proved invaluable. The patients from Malta were transferred to this sanatorium and, at the time of writing, some 500 other Yugoslav patients were being treated or had been discharged on surveillance. Many of those admitted were hopelessly ill on arrival and it is too early to write of results in the others, but it is encouraging to note that 72 fresh APT inductions were performed in the first two months of the sanatorium's foundation. The differential diagnosis between starvation and active pulmonary tuberculosis was frequently difficult and required lengthy observation. It was noted that Yugoslav doctors attach more importance to the regular administration of large doses of calcium, intramuscularly or intravenously, and to the altitude of their sanatoria than does current British medical opinion.

In spite of the published statements to the effect that the enemy had deliberately mutilated or tortured Yugoslav soldiers and civilians only one doubtful case (burns of the soles of both feet) of anything of the kind was reported from the hospitals in Italy. This cannot be accepted as conclusive—dead men tell no tales—but no evidence to justify the accusation that such things were being done in 1944 was gathered. Perhaps the writing on the German wall had been seen by this time.
Psychiatric patients figured amongst the NLAJ casualties in the same ratio as amongst other Allies, but it was noteworthy that the diagnosis as between an organic and a psychogenic condition was very seldom made difficult by camouflage, as indeed was to be expected in dealing with the straightforward, uninhibited Partisan.

The Jugoslavs were grateful, cheerful, co-operative and often singing (their "Literature of Escape") patients to whom the R.A.M.C. responded by giving of their best and by accepting additional work. One characteristic of the NLAJ patient at all times of the day, whether in bed or not, was the verbal greeting given to all: and it is fitting that this word, which may be freely translated as meaning "Hail! Fellow, well met," shall conclude this article, as a tribute from the R.A.M.C. to the NLAJ—"ZDRAVO."

For much information and assistance in the writing of this article, I wish to thank Lieutenant-Colonels N. Nikolic and A. Papo of the NLAJ and Lieutenant-Colonel N. G. G. Talbot, R.A.M.C. Some use has been made of the statistics given in an address by R. Bicanic, published in the Geographical Journal, vol. ciii, January-February, 1944.

Acknowledgment is made to Brigadier W. M. Cameron, O.B.E., M.B., D.D.M.S., for encouragement to write this article, and to Major-General E. A. Sutton, C.B.E., M.C., D.M.S., A.A.I., for permission to forward it for publication.
An Account of the Medical Services of the National Liberation, Army of Jugoslavia and of the R.A.M.C. Assistance Given to it

J. W. Hirst

*J R Army Med Corps* 1945 84: 105-114
doi: 10.1136/jramc-84-03-02

Updated information and services can be found at:
http://jramc.bmj.com/content/84/3/105.citation

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/