

CHAPTER 9

HUON PENINSULA CAMPAIGNS

IT has been shown earlier that the axis of advance from Wau did not point only at Salamaua. Far-sighted strategy recognised the importance of dispossessing the Japanese of islands to the north of New Guinea, and of recapturing New Britain. This implied mastery of the sea approaches and, still considering the future campaigns step by step, demanded the thrusting of the Japanese from their strongholds on the north coast of New Guinea. Hollandia, Wewak, Aitape and Madang were all considerable distances apart, but constituted firm bases from which attacks might be launched, counter-blows repelled, flanking movements carried out and control ensured by sea, air and land. On the Huon Peninsula were strongholds too, the capture of which was essential, so that from these bases attacks and by-passing manoeuvres could be safely made. With these ambitious plans viewed thus in reverse it was evident that the Allied forces in pressing on to the coast from the goldfields would not merely aim at Salamaua as an objective, but at Lae and its neighbouring airfields. Hence the latter half of 1943 had scarcely begun, when Lieut-General Herring was able to indicate to Major-Generals Wooten and Vasey, commanding the 9th and 7th Divisions, the Commander-in-Chief's plans for a major offensive. The first and most clearly defined objective was the taking of airfields which would give dominance over the Lae-Markham Valley area, and permit quick and decisive movement against the Japanese on the Huon Peninsula.

To the medical services these campaigns presented new problems, for the large-scale operations involved an air movement on Nadzab, with its great strategic aerial possibilities, and a sea-land strike to the east of Lae. Such operations would require considerable development of sea and air movement of the sick and wounded, and land evacuation would be further complicated by the deployment of casualties over country frequently intersected by rivers, some of which presented formidable obstacles.

During the Wau-Salamaua campaign advanced medical posts often had to be built and equipped on the mountain ridges at short notice, but now medical parties would need to treat casualties at a still earlier period of action, and to evacuate them under even greater difficulties. Transport would be developed in all its varieties, and fresh bases would be exploited as the lines of communication lengthened. Even greater difficulty might be experienced in the evacuation of casualties during amphibious landings.

Farther back approach areas were needed, such as air bases set up at Milne Bay, Goodenough Island and Dobodura, and plans were made to develop other air bases on islands at the south-eastern tip of New Guinea. In addition the exploitation of suitable posts on the seaboard, such as Milne Bay, Oro Bay and Buna provided linkage of other evacuation routes by sea.

TAKING OF LAE

The immediate plans were conditioned largely by the nature of the terrain over which land forces would advance to take Lae, and later drive the Japanese farther north. The Markham River, losing the pristine force of its headwaters in the Finisterre Range, spread out widely in the Markham Valley, making approach to Lae difficult from the south. The Ramu, rising in the same way in the Kratke Range, flowed through a narrower alluvial valley towards the north-west and fanned out to the coast not far from the Sepik River. The valley areas, particularly the extensive Markham, were suitable for airfields, and the best area for an air base against Lae was Nadzab. Therefore the 7th Division, experienced in actions in jungle and mountain country, and since then specially trained in air movements, was chosen to fill the role of the first Australian air-borne division.

The 9th Division was assigned amphibious landings on beaches to the east of Lae. During August detailed planning began at New Guinea Force headquarters under the direction of General Blamey and his Chief of Staff, Major-General F. H. Berryman; Lieut-General Herring thereafter commanded I Australian Corps. This force collaborated with the United States Navy and the Fifth United States Army Air Force in constructing a combined plan.

For the purposes of description, and particularly of setting out the medical tactics involved in the Lae operations, it is simplest to divide the action into two parts; the landings east of Lae on the shore of the Huon Gulf, with the subsequent assaults of the force defending Lae, and the air-borne attacks on Nadzab.

The 9th Division underwent a course of jungle training on the Atherton Tableland, following its return from the Middle East, and profited by the experience of other formations which had been engaged in jungle operations. The attached medical field units had some opportunity to acquire individual practice on the tableland, and at Cairns special exercises were held in combined operations. These rehearsals of sea landings were rather limited in scope by the demands of other Allied Pacific fronts, which restricted the numbers of small craft available. There were, in fact, never enough craft at any given time to exercise the field ambulance with its brigade. Unfortunately the 2/3rd C.C.S. was unable to participate in jungle training of its members as the unit was fully engaged in looking after the sick. For the same reason the C.C.S. could not join in rehearsals of combined operations with small craft held at Cairns.

Even at this stage it was realised that there were difficulties in organising medical arrangements of Allied forces by reason of the different methods adopted by the Australian and American medical services, and their various degrees of experience in action. For example, the joint evacuation plan included the use of medical units of two Allied forces in the forward arrangements for evacuation of sick and wounded. Even in methods of handling and recording casualties there were wide differences which in the opinion of Colonel B. S. Hanson, A.D.M.S. of the 9th Division, were likely to lead to confusion.

MEDICAL PLANNING

The medical plan aimed at providing for prompt collection of casualties and the allocation of a detachment of a field ambulance in support of each battalion. This called for the early establishment of a medical unit within the beachhead, and the establishing of an advance station where necessary surgery could be performed early. Transport of wounded would be difficult unless distances were short, for native bearers were not available, and bearers of the field ambulances were relatively few. The arrangement was therefore designed to provide a series of dressing stations, which would give surgical aid, and, avoiding staging posts as far as possible, would move forward as the military situation permitted. It was desirable that such forward stations would be able to move from the traffic of the beachhead as soon as possible, and have access to both the main coastal track and a subsidiary track leading to a beach where sea evacuation could be provided.

For purposes of organisation some of the ambulance drivers were used as bearers, and each ambulance company was divided into two parts, each of which could provide an A.D.S. commanded by a medical officer, and consisting of one or two officers and thirty-five men. Each section supported a battalion, thus leaving a reserve at the disposal of the ambulance commander. Care was taken to provide men in each section who could carry out the basic functions of members of a field ambulance, who might be called upon for nursing, bearing, cooking, driving and clerking. The ambulance members each carried a load of about 20 pounds, and each of the four (out of seven) jeeps allotted to the forward dressing stations carried 1,000 to 1,200 pounds of stores. Extra stores were to be brought in by ships and small craft, with the proviso that the weight of no single item should exceed the lifting power of two men. Jeeps were equipped with frames to permit carriage of four stretchers: one sitting patient could also be carried. The American medical corps would provide a medical company which consisted of clearing, collecting and portable surgical sections, one of each, with two "mission aid stations" which were somewhat expanded aid posts. The function of this company was the collection and treatment of wounded on the beach, giving assistance to Australian surgical services if required, and evacuation of the Australian C.C.S. and beach M.D.S. if within 400 yards. This unit also had the responsibility of all evacuation of casualties from the shore to the ships. The A.D.M.S. of 9th Division doubted if this was practicable, and these doubts were amply justified. Hanson pointed out that the proposed use of an American medical unit "at the very apex of the Australian collecting system" was a risky experiment, especially as the unit would be lacking in relevant experience.

Brigadier Furnell also experienced difficulties in ensuring adequate liaison between the Allied medical services, although conferences of the officers concerned, who included Admiral D. E. Barbey as S.M.O., United States Navy, and Brigadier R. N. L. Hopkins, Australian liaison officer, were fully briefed before meetings were held at Milne Bay. Though drastic revisions of the plans were made at these conferences, they were not duly

notified to the officers concerned, and in view of the risk of break-downs Herring arranged for the D.D.M.S. to fly to Buna for special meetings with Barbey. Final arrangements were thus made, but there were obvious drawbacks in such last minute two-man conferences.

THE 9TH DIVISION'S LANDING OPERATIONS

The successful reduction of the incidence of malaria in Milne Bay made it possible to exploit this valuable harbour and to use the area for staging troops *en route* for other operations. The 9th Australian Division was assigned the leading role in the landings made by the amphibious force. Air support had been made effective by the provision of an airfield at Tsili Tsili in the Watut Valley, and landing facilities at Bena Bena. This gave fighter protection to the medium bombers operating from Dobodura. Allied troops had also provided protection for these vital airfields, and the country south of the Markham River was vigorously patrolled. Consideration of the plan during July led to an increase in the covering forces for the amphibious movement, and exercises carried out at Normanby Island led to some changes in the detailed plan. The final arrangements were based on simultaneous landings on two beaches; the chief of these was called Red Beach, and the subsidiary Yellow Beach. The plan provided for a preliminary bombardment by destroyers, followed by the carrying out of the operation by three separate groups of Australian troops.

Early in the morning of 4th September a convoy brought the first landing group in, after a bombardment of six minutes on the foreshores of the Red and Yellow Beaches. Landings were made by the 20th and 26th Brigades at Red Beach, and the 2/13th Battalion landed at Yellow Beach. Medical cover was provided for the assault brigade by the light section of the 2/3rd C.C.S., the medical company of the American shore battalion and the 2/8th Australian Field Ambulance with a surgical team attached. This surgical team from the 2/11th A.G.H. consisted of Major G. Newman Morris, Captain T. N. Bolger, and three orderlies.

The transport of medical units was not quite according to plan, as the landing craft used differed in type and size from those used in training on the mainland. The A.D.M.S. was not able to provide a complete medical and surgical service for the 2/13th Battalion; though this unit landed early it went ashore three miles from Red Beach, and was too isolated to permit further disposal of the medical resources. However a standard A.D.S. provided emergency service, and arrangements were made to return casualties to Red Beach in returning supply craft.

No real forecast of casualties was possible; if the landings were opposed there might be many casualties within a short time, with a later secondary wave as troops pressed on. It was not until the fifth wave of the first landing reached the beach that some thirty-four casualties occurred from a bombing raid. Just at this time the medical units were beginning a reconnaissance in order to establish collecting and clearing stations, and this important step was delayed. Parties of the American medical forces on the beach treated the men in an improvised shelter.

As there were no further casualties at this stage, arrangements could be made successfully for the setting up of an Australian medical area some 500 yards from the beach. Five hours after the beginning of operations, the 2/8th Ambulance had an M.D.S. ready to receive patients, though difficulty was experienced in bringing up enough supplies to the area, particularly in dragging wheeled vehicles off the beach. The same difficulty hindered the American medical company, and stores had to be carried by hand, thus delaying the siting of the unit. As expected, some confusion occurred in the early stages of the landing owing to lack of coordination between the evacuation orders laid down beforehand in the 9th Division Medical Operation Order and the orders issued after landing by the American shore battalion commander. This interfered with orderly treatment of casualties to some extent, and failure to keep records at this stage afterwards caused considerable trouble.

Later on the first day the 26th Brigade arrived, with an A.D.S. of the 2/11th Field Ambulance accompanying each battalion. The headquarters of the ambulance awaited further movement of the brigade, while some of the men of the companies helped the other medical units.

During the night of the 4th-5th some items of medical equipment were lost when a convoy was attacked: two L.S.T. were damaged and some casualties were sustained. Other medical parties arrived without harm, the heavy section of the 2/3rd C.C.S., some men of the 2/8th and 2/11th Field Ambulances and the 2/3rd Malaria Control Unit. The stores of the C.C.S. were ready loaded on ten-wheel trucks, and as soon as day came these were driven past where the light section stores were still immobilised, to the medical area. Pre-loading on trucks also had this advantage, that should hand carriage be necessary, it was more simply done with goods packed in groups and not dispersed. On the following night the arrival of the 2/3rd Field Ambulance with the 24th Brigade completed the requirements of the medical services attached to the 9th Division.

During this first stage of landing and assembly, the 2/3rd C.C.S., commanded by Lieut-Colonel J. E. Gillespie, settled near the Buso River and began to expand. Damage of the neighbouring American unit by bombing threw the task of caring for their patients on the Australian C.C.S.

On the 6th, when the stage of exploitation began, there was a considerable call for transfusions, and as whole blood and wet serum were insufficient in amount, American dried plasma was used with advantage. The 2/3rd Field Ambulance, under Lieut-Colonel A. W. Robertson, after a midnight landing on Red Beach, moved near a village and then on to the C.C.S. area, and sent light sections to the battalions. The 2/8th Field Ambulance, commanded by Lieut-Colonel L. M. Outridge, landed near the Buso River, and after moving into good scrub cover, admitted casualties from bombing raids and started work with their surgical team. Small sections were used to support the battalions. Lieut-Colonel W. W. Lempriere set up the 2/11th Field Ambulance in the medical area about one mile from the beach, with its headquarters near the M.D.S. Small sections of the bearer companies of this unit were kept attached to the battalions

pending their advance. The problems of supply and evacuation by sea and air were more difficult than the unit had found in the Western Desert, and cooperation with the Allied units intensified them. Further groups of the ambulance personnel landed with the 2/23rd, 2/24th and 2/48th Battalions and crossing the Busu River advanced towards the west. A jeephead was set up at Aluki, where divisional headquarters was later established.

By the 6th, the 26th Brigade was advancing north along the Burep River, and the 24th Brigade along the coast, where the Busu River was a serious obstacle. Communications were difficult and the medical detachments had great trouble in getting transport forward. Medical equipment and stores had to be carried by the men together with five days' rations and personal gear. Hanson found it impossible to keep accurately informed about forward conditions, and had to rely on the initiative of his medical officers. Fortunately their training had inculcated in them the importance of being self-reliant. The administrative troubles would have been intensified had there been many casualties.

This early period of consolidating the advantages gained at the landing was fraught with many trials. The headquarters of the 2/11th Ambulance moved to Apo over a difficult wet forest trail, and on the 7th, attempted on inaccurate information to set up an M.D.S. on a site wrongly believed to have access from the beach. The site, Singaua, was found impracticable, and was occasionally shelled, so that the unit moved on foot to the Burep River, and attempted to carry stores back to Red Beach and ship them to Burep River by water-craft. Gradually the 2/3rd and 2/11th Ambulances got their M.D.Ss. working, and a more or less regular run to and from Red Beach was organised. Transfer of wounded men to the 2/3rd C.C.S. needed great energy and determination, as the patients were carried by hand for over three hours over a rough corduroy track. The Japanese attacked Red Beach on the 6th and casualties from bombs occurred among the staff of the American medical post. The patients were transferred to the 2/8th M.D.S.: one hundred were divided between this unit and the 2/3rd C.C.S. On the next day, the A.D.M.S. instructed the American medical company to close, and the 2/8th Ambulance, using its vehicles, took over the collection of the patients centred in small craft on the beach, and arranged their evacuation to ships. It was found much more satisfactory to leave these functions to one authority, not to two whose training and method were along different lines.

THE 7TH DIVISION'S AIR-BORNE OPERATION

The 7th Division had been training in Moresby for an air-borne operation whose purpose was to assemble a land force west of Lae and north of the obstacle of the Markham River. This force formed the other half of the pincers, which with the 9th Division, was to seize Lae and establish coastal bases from which further actions would drive out the Japanese from the north-eastern coast of New Guinea.

The preparatory stages of this operation did not call for any but routine medical planning, which provided for medical cover of the 7th Division

based on the Bulolo Valley. Safety of supply lines and transport aircraft were ensured by the airstrip facilities already provided at Bena Bena and Tsili Tsili. The air-borne operation was planned to begin on 5th September, known as Z-day in order to avoid confusion with the D-day of the sea-borne invasion.

The first phase, the capture of Nadzab by paratroops, was successfully carried out under cover of air bombardment and smoke screens. The 503rd United States Parachute Infantry Regiment landed unopposed, with a paratroop detachment of the 2/4th Australian Field Regiment in support. Part of the Australian field regiment parachuted guns into Nadzab. Shortly after this the 2/2nd Pioneer Battalion and the 2/6th Field Company arrived as reinforcements. These two units had been flown to Tsili Tsili some days earlier, and on 2nd September proceeded overland to the southern side of the Markham River. On the advance from Tsili Tsili to Nadzab a detachment from the 9th Field Ambulance accompanied them for the first two days, and another party of one officer and eight orderlies from the 2/5th Field Ambulance were with them throughout on the march to Nadzab. The river crossing was soon accomplished by folding boats secretly brought up by night. The paratroop casualties were dealt with by medical officers attached to their own regiment, and those occurring in the A.I.F. were treated by the A.A.M.C. party.

The air-drop began at 10.35 a.m. on the 5th, and by evening on the next day a rough landing strip was prepared to a stage sufficiently advanced to allow some troop carriers to land with engineers and their equipment, and anti-aircraft guns. Troops were now coming through to Tsili Tsili from Moresby, and the divisional headquarters was able to move on to Nadzab on the 7th.

The first troops of the 7th Division to arrive by aircraft at Nadzab were those of the 25th Brigade Group, which, under command of Brigadier K. W. Eather, began the task awaiting the division, that of sharing with the 9th Division the attack on Lae. The first step towards this end was to prevent the enemy from reinforcing Lae overland.

The brigade began to advance along the Markham Valley road on the 8th. At this time only the 2/4th Field Ambulance was available for medical service to the attackers on Lae from the west. The headquarters of this ambulance arrived by air at Nadzab on the 7th, and on the following day set up an A.D.S. at the airstrip.

Captain H. J. Edelman and eight O.Rs. from the 2/5th Australian Field Ambulance were attached to the 503rd United States Regiment's collecting post. There were fifty-five jump casualties among the paratroops admitted on the 7th. Next day Lieut-Colonel Hobson arrived at Nadzab with some members of the 2/4th Field Ambulance and Captains W. P. Ryan and C. A. C. Leggett as the surgical team. The M.D.S. of this field ambulance was set up and Edelman's section established a plane loading post on the old Nadzab strip. Details of medical organisation were coordinated with the general plan, which was successfully carried out.

Labour commitments in this operation were considerable and varied. Shelters had to be erected for casualties, and domestic help was needed for medical units when the numbers held exceeded their capacity. Arrangements were made for the evacuation of casualties from less accessible places, and, though jeeps were relied upon where tracks were practicable, it was not possible to send wounded by this route. As a matter of fact the numbers of patients handled could not be kept down to the standards accepted for field ambulances. As in other campaigns, and those involving much less complicated movements than the aerial transport of a division, the medical resources needed reinforcements in times of stress. This could be given by a corps field ambulance, if such were available, or a C.C.S. in support of the divisional medical services. As in previous operations in tropical zones, the sickness rate exceeded the number of casualties due to battle injuries. The inroads of dysenteric diseases, typhus, and in particular malaria were worrying, and affected fighting strengths. In the early stages of the advance to Nadzab casualties were evacuated to Tsili Tsili, but after the paratroop landing they were sent forward to Nadzab.

THE DIVISIONS ADVANCE

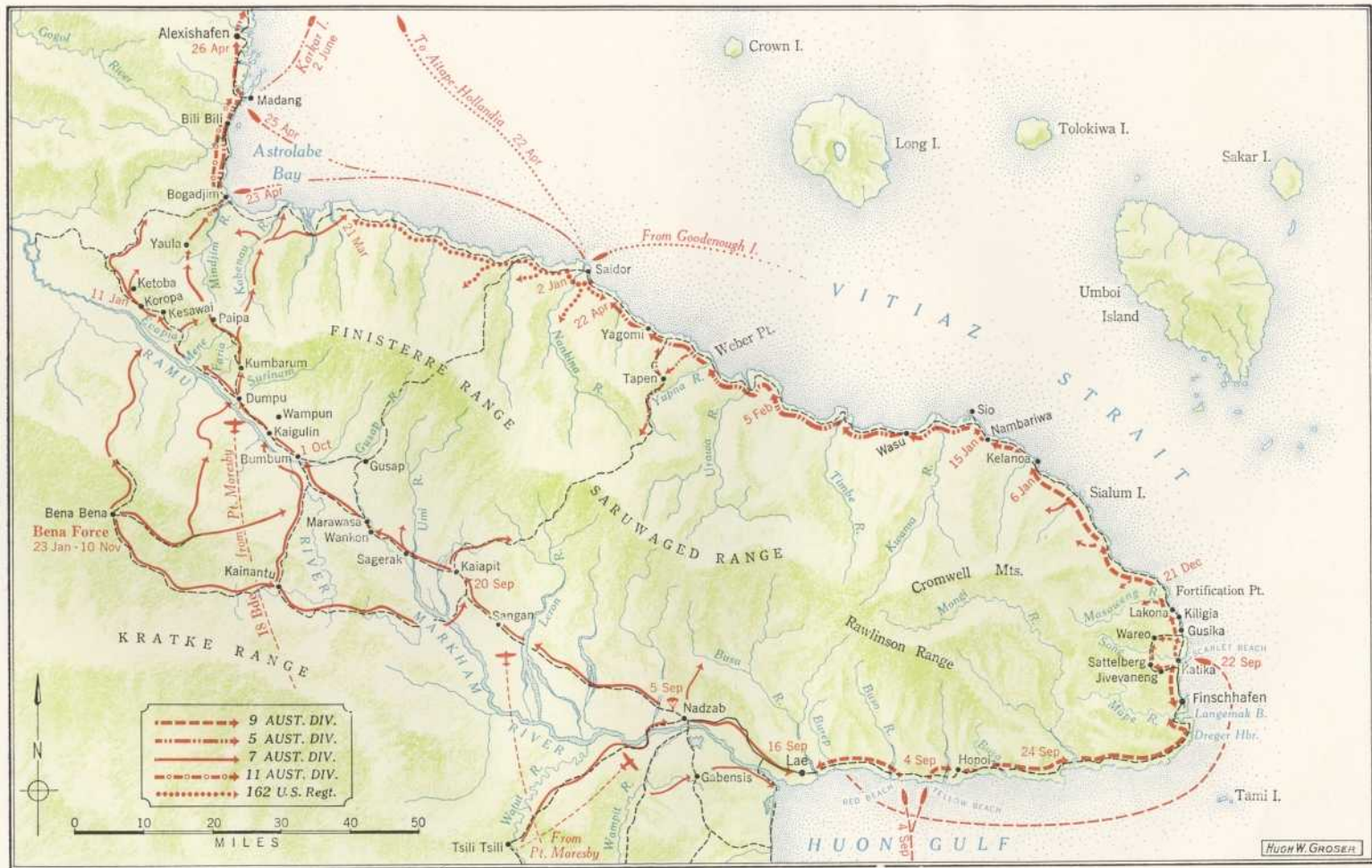
On the 8th, the leading battalions of the 24th and 26th Brigades of the 9th Division had reached the bank of the Busu River. The 25th Brigade of the 7th Division was ready for the advance from Nadzab, in spite of a tragic accident when a Liberator bomber had crashed into a company of the 2/33rd Battalion at Ward's drome, Moresby, while the men were waiting to emplane.

By the following day the two divisions were carrying out the second phase of their operation, the advance on Lae.

9th Division. The 26th Brigade, after the difficulties of the landings, was now faced with the crossing of the Busu River, whose broad channel ran swiftly shoulder high. Both the 24th and 26th Brigades found Japanese on the other side of the river, but late on the 9th, the 2/28th Battalion forced a crossing near the coast. Many of the men were washed away and some were drowned, and two-thirds of their equipment was lost, but they secured the position and held it against enemy attack. The 2/32nd and 2/43rd Battalions succeeded in crossing by small craft and by a road from the Burep River made by engineers.

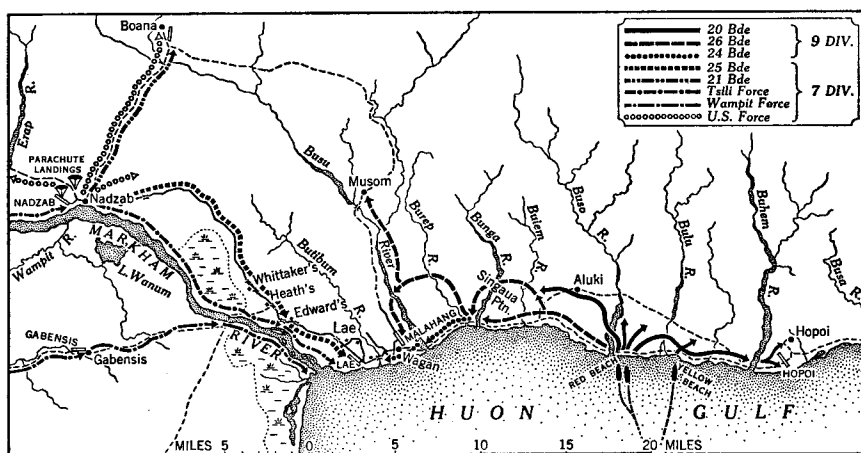
Casualties were sometimes collected under fire in the Busu area, and the forward battalions were subjected to shelling and bombing from the air. The 2/23rd and 2/24th Battalions advanced through dense rain forest from the Burep to the serious obstacle of the Busu River. The 2/23rd Battalion was shelled in this area, and the R.M.O. Captain J. F. Davies was killed.

Meanwhile the attached medical units had found the necessary movements made on previous days were difficult and exhausting; many of the carries undertaken on slippery jungle tracks involved severe strain on the stretcher bearers. At the beachhead also there was great activity, and problems arose with evacuation of sick and wounded. The American



Huon Peninsula

medical company which had originally been assigned the tasks of collecting patients and transferring them to outgoing ships, had been closed by the A.D.M.S. on the 7th, and Gillespie was appointed S.M.O. of the beachhead. On the night of 10th-11th the 4th Field Ambulance arrived at Red Beach with the 4th Brigade, which permitted the 20th and 24th Brigades to proceed together. This ambulance unit, commanded by Lieut-Colonel J. H. Body, relieved the 2/8th Field Ambulance and established an M.D.S. in the medical area on the beach. One A.D.S. relieved the post on Yellow Beach, and one at Singaua plantation. The 2/8th Ambulance was then used as a reserve with the 20th Brigade west of the Burep



Lae-Nadzab

River. Only a few casualties were handled here; these were taken by L.C.V. and L.C.M. from the mouth of the Burep and from Red Beach. Ambulance cars brought with the 4th Ambulance were used for transport of patients between the beach and the C.C.S., and usually negotiated the muddy tracks successfully, in fact better than jeeps. Sometimes, however, long and arduous hand carriage of patients was the only practicable method, especially at night.

The Red Beach area was surveyed by the 2/3rd Malaria Control Unit; no anophelines were found, and most of the infantrymen discarded their nets on account of the weight.

The effect of salt lack on energy was noted here, and the A.D.M.S. recommended at least three tablets daily for men working hard or marching through jungle. Along the coastal areas to the east of Lae the Japanese were still active, and more artillery was brought in to support the troops. On the 13th the men of the 9th Division pressed on along the coast and on the parallel track a mile inland, and by the next day the 26th Brigade had bridged the Busu and was holding a bridgehead. The Japanese, after resisting strongly, abandoned their positions during the night. On the

morning of the 15th the 2/24th Battalion captured a strong enemy post north of the Busu crossing and inflicted heavy losses, and the 2/23rd and 2/28th Battalions repeated these successes at Malahang anchorage and the sawmill area. The three brigades, the 20th, 24th and 26th continued to press on towards Lae with little opposition, and made contact with the 7th Division on the 16th.

During the period elapsing between the beach landings and the actual final advance on Lae the field ambulances of the 9th Division had many problems. Heavy rain, deep mud, difficult tracks and river crossings made the movement of sick and wounded a labour. In the second week of these operations there were many calls on hospital accommodation. The men of the 2/3rd Field Ambulance were often knee-deep in mud on the tracks, erection of tents was most difficult, and the theatre and resuscitation ward were two feet in mud, needing a corduroy base. When the Busu was crossed it was necessary to carry sick and wounded by hand over corduroy road to the Burep and then by jeep to the mouth of the river. Here the river was wide but shallow with a stony bed, and easily crossed by jeep. Two patients with compound fractured femur were carried across the Busu footbridge by hand. The personnel of the 2/8th M.D.S. had to act as stretcher bearers to the beach by night as the mud made the roads impassable for jeeps. Their work was made more difficult by an outbreak of bacillary dysentery thought to be due to infected water.

For several days before the Japanese resistance faded, there were numbers of patients requiring resuscitation, and a satisfactory method of cleansing Soluvac bottles was not easy to devise. The only water available was from the muddy Burep River, but, although some deposit could not be avoided, boiling the bottles and running through dextrose solution seemed to be satisfactory, as no reactions occurred from this cause. Major D. G. Duffy compiled notes on resuscitation at the 2/3rd C.C.S. during the combined operations. There was considerable call for blood, and supplies of whole blood and wet serum ran out: American reconstituted dry plasma was again useful. Casualties from bombing attacks, particularly in the first assaults by high explosives, frequently needed up to four litres of whole blood: lesser quantities of blood or serum did not lower morbidity or mortality rates. In later stages blood was sent from Morobe, and travelled well packed in ice; blood left in the melted ice kept for two or three days. Blood was taken from troops working on roads with the technical assistance of orderlies trained in blood banks in the Middle East. There were drawbacks to the use of operational troops as donors: stored blood would have been helpful in both light and heavy sections of the casualty clearing station in the initial landings.

The 2/8th Ambulance found some of the hand carries very long from the remoteness of the places where patients were found. Movement of patients with severe injuries was most difficult on the narrow beach strips. The M.D.S. of this unit moved to the Busu on foot, and there handed over to the 4th Field Ambulance. The position was eased by the use of five A.D.S. sections as staging posts for casualties from the Busu area.

7th Division. Meanwhile two additional airstrips were started at Nadzab, and on the 10th this work of airfield construction was taken over by American aviation engineer battalions. The 25th Brigade was advancing down the narrowing Markham Valley towards Lae. The engineers worked hard to provide roads between Nadzab and Lae for the moving troops, their guns and their supplies, building bridges and culverts, draining and clearing the tracks. Infantry and artillery cooperated closely as the pace increased. The 2/4th Field Ambulance was able to cope with the medical cover for the 7th Division forces, and manned posts along the main road to Lae.

On the 12th, the 2/25th Battalion drove farther on and expelled the Japanese from positions in Whittaker's plantation. Holding the road at Whittaker's bridge the battalion placed two of its companies in strong positions on high ground overlooking Heath's plantation, which the patrols of Kanga Force had so carefully explored months earlier. Repelling attacks on the night of the 13th, the battalion crossed the bridge next morning and captured the destroyed Heath's plantation. During the final attack on these positions the A.D.S. moved up well forward with a surgical team near Heath's plantation, but some difficulties were experienced by the regimental stretcher bearers in bringing casualties from the 25th Brigade to the M.D.S. Delays as long as eighteen hours occurred in places owing to difficulties in picking up the wounded. The Japanese resisted strongly at first on the 14th, at Edwards' plantation, but air and land attack soon broke down their stand. Next day there remained only the question of how much resistance was to be expected from the remnants of the Japanese forces who were still living and who had not escaped, as did the majority, from the stricken areas. Many Japanese escaped from the operations at Lae, but there was reason to believe that weakened by starvation, illness and exhaustion very few were successful in reaching the north coast.

FINAL ENTRY INTO LAE

Battalions of the 9th Division crossed the Busu River on the 15th accompanied by their light ambulance sections and occupied the Malahang airfield. The 24th and 26th Brigades were ordered to press on early the next morning to the Butibum River, but an air attack on the local strongholds was no longer necessary. The 7th Division found that all resistance had disappeared from the outskirts of Lae, and all that hindered their entry to the town was the fire of the 9th Division's 25-pounders, which caused temporary cessation of movement for some two hours. Early on the afternoon of the 16th the 7th Division entered Lae, and the 9th Division held the commanding area of Mount Lunamen to the sea. The two assaulting divisions soon made complete contact in the ruined town and this phase of the operations was over.¹

The occupation of Lae drastically altered the medical position. No longer was the main problem one of overcoming the natural obstacles of

¹ Australian casualties in the advance to Lae 4th-16th Sept: killed in action 16 officers, 198 other ranks; wounded in action 38 officers, 435 other ranks.

the terrain and the resistance of the enemy. Capture revealed the town as an insanitary place, ruined by bombing and defiled by dumps of rubbish and dead bodies. The question was now one of restoring a foul and shattered township to a place not only safe from sea, land and air, but safe for living.

FINSCHHAFEN

The responsibilities of the 25th Brigade at Lae ended with the formal capture of the town area, and the next day, 17th September, the men of the 7th Division returned to Nadzab and left Lae to the 9th Division, whose task was now to expel the Japanese from Huon Peninsula as the necessary step in gaining mastery of the Vitiaz Straits. There was no delay in planning, for on the 18th Herring gave the 9th Division the assignment of the capture of Finschhafen and Langemak Bay. These objectives offered a base for attack on Western New Britain and were to be attained by further sea landings. Red Beach, which had been the site of the medical centre during the action, was dwindling in importance, and men needing attention were easily looked after by the forward M.D.Ss. Within a week of the fall of Lae patients were being sent back by empty supply planes, and as Lae was cleared it became more and more the local base.

LANDINGS ON SCARLET BEACH

On the afternoon of 21st September, the 20th Brigade and associated troops began to embark from Red Beach and G Beach east of Lae. The area chosen for the landing of this continued operation was on a beach known for the purposes of the action as Scarlet Beach, near Katika, north of Finschhafen. As the landing ships made for this beach, the 22nd Battalion began to move overland from Hopoi on the Huon Gulf, converging towards the objective of the sea-borne force. Preparations for departure were hurried. The medical units had to gather their stores hastily. The 2/8th Field Ambulance assembled nine tons of equipment and stores from three areas, two tons in excess of the official allotment, though the unit thought twelve tons was needed. Medical stores were fairly adequate for the necessary reserves: stretchers were scanty and some were beginning to rot from heavy service in the humid climate, but engineers supplied sixty of durable steel mesh. Twenty American pyramidal tents were also supplied and found most useful. These tents were successfully adapted for operating theatres, two tents brigaded gave space for two tables.

On arrival at the beach early next morning the landing parties found that preliminary sea bombardment of Scarlet Beach, the selected area, had not prevented opposition by the Japanese. The first two waves of landing craft mistook Siki Cove, a small inlet to the south, for Scarlet Beach, and landed there. The light section of the 2/3rd C.C.S. had left Red Beach under Major W. R. Gayton and arrived at the landing beach at midnight on the night of 21st-22nd. This unit and the 2/8th Field Ambulance supplied the chief medical cover for the initial movement to Finschhafen. The 2/8th Ambulance undertook the medical care of the

20th Brigade and a section of the 2/11th Field Ambulance under Major R. Mackey accompanied the force for purposes of beach evacuation. A detachment of the 11th Malaria Control Unit was also sent. As opposition was expected, facilities were provided for holding patients for some fifteen days, and the 2/8th Ambulance had with it a surgical team comprising Morris and Bolger. The third wave to reach the landing area became assault troops, facing enemy opposition, and casualties occurred early from small arms fire; some men were wounded while on the landing craft, and others on the beach or in the water. Outridge, who was S.M.O. of the landing beach area, had difficulty in securing attention for some men, as they were wounded before a post could be established. Some members of the medical units were carried off again on the landing craft while they were still attending to wounded.

MEDICAL ARRANGEMENTS

The medical area was placed 250 yards inland from the beach, and for convenience of administration the M.D.S. of the ambulance and the light section of the C.C.S. were set up close together by direction of Colonel Hanson. Later Hanson questioned if this disposition was advisable, as adequate dispersal was difficult, and combatant installations soon collected round the medical area, making a good bombing target. It was soon found that fires attracted air raids, and in the effort to avoid smoke medical units had great trouble in feeding patients. A few members of the staff and patients were killed in the medical area, and there might easily have been more, for bombs fell nearly every day, and often several times a day, during the first fortnight.

At first the medical plan did not include any members of the American medical services, but later a detachment set up at the beachhead, and worked happily with the Australian centre, sharing their work and their risks. When the American forces developed an area in the region of Dreger and Schneider Harbours the detachment handed over its patients to the 2/8th Ambulance and reverted to American command.

Fifty-three casualties came through the 2/8th M.D.S. on the day of the landing; a large proportion of wounds were serious, and raised problems in resuscitation. There were no delays in clearing patients by Mackey's A.D.S., as most of the casualties occurred in the jungle fringing the narrow beach. Sixty wounded passed through this A.D.S.: some of these casualties were due to snipers who attacked the area between the advanced and main dressing stations. Surgical work was promptly begun at the M.D.S. as soon as it was set up, and twenty-six operations were performed on the day after the landing. Twenty-six patients were sent out by L.S.T. but, in accordance with instructions, no seriously ill were included.

Certain difficulties were experienced during the Scarlet Beach landing which could not be avoided because of the demands of tactical planning. Forthcoming operations in the South-West Pacific Area demanded the diversion of the main strength of the Allied Air Forces; this reduced the

amount of protection which would otherwise have been desirable for the establishment of the landing forces. Landing sea-craft were being assembled for use in assaults on New Britain, therefore only a much smaller number of such craft could be spared for the combined operation on Finschhafen.

On the 23rd the Australian force began to advance down the coast to Bumi River. By next day evacuation of sick and wounded was proceeding by sea through the 2/11th Ambulance section to Major K. J. J. Dorney's A.D.S. at Lae, and then on by sea or air to Moresby. The A.D.M.S. directed that all patients likely to be in the M.D.S. more than two days should be sent back if possible. There was considerable enemy air activity on the 25th, and the M.D.S. underwent daily air attacks, but the A.D.Ss. were well protected on land by the battalions. The force had now to consolidate its strength, and began to construct a jeep track connecting with the track along the coast to facilitate transport of casualties and supplies.

The 2/43rd Battalion relieved the 2/17th Battalion at Scarlet Beach on 30th September. The A.D.Ss. moved gradually south in support of the battalions, but the M.D.S. was too busy to move to a less congested and therefore less bombed area, especially as a number of severely injured men were under treatment. As the operational commitments of the force increased, the staff of the M.D.S. observed that the percentage of proven malaria among men with febrile symptoms was also increasing. It was suggested this might be related to the discarding of nets by men in operational areas. There was an outbreak of diarrhoea in the 2/24th Battalion; it was suspected to be dysentery but no sulphaguanidine was available in the area for treatment. On the whole, the health of the men had been satisfactory, but the numbers of sick were now increasing and were beginning to call for more accommodation.

MOVEMENT ON FINSCHHAFEN

The enemy was still showing strong resistance: the 2/15th Battalion advanced down the coast towards Finschhafen till the Bumi River was reached, and there found an active Japanese force at the coastal crossing. The Australians crossed the river higher up, and patrols found the enemy in growing strength at Sattelberg. The 20th Brigade now concentrated its forces after the arrival of the 2/43rd Battalion, and on 1st October with heavy air and artillery support, a severe action began and lasted all day while the 2/13th Battalion attacked strong positions at Kakagog. On the following morning the Japanese were found to have withdrawn, and later in the day Australian troops occupied Finschhafen, while contact was made with patrols of the 22nd Battalion. This battalion had come overland from Red Beach, and now united with the brigade south of Langemak Bay.

By the 8th an administrative change was made in corps command: the Headquarters of the I Australian Corps was relieved by the Headquarters of the II Australian Corps under command of Lieut-General Sir Leslie Morshead. Three days later the Headquarters of the 9th Division was established on the northern shore of Langemak Bay.

ESTABLISHMENT OF MEDICAL UNITS

The position was now firmer in the southern part of the peninsula, where supplies could be brought in by small craft. The C.C.S. had meanwhile left Red Beach in convoy on the 7th, its craft overloaded with its heavy equipment; after overshooting the correct landing beach and meeting some evidence of hostility, it had reached Scarlet Beach and thence was redirected to Kedam Beach. On arrival the C.C.S. was able to give immediate help to existing units by assigning twenty orderlies to work with the light section.

The sea ambulance detachment of the 10th Field Ambulance arrived at the same time, and under the command of a bearer officer greatly improved the conditions of transport returning to Lae. The site chosen for the 2/3rd C.C.S. was at Simbang on the shore of Langemak Bay. Some care was necessary in the selection of a site in view of the expected counter-attack by the Japanese; protection from the air was specially considered. Heldsbach had been marked as a future good medical site, but at this time was unsafe. Sattelberg, a previously proposed site, was also in the hands of the enemy. The opening of the C.C.S. could hardly have come at a more opportune time, with increasing casualties due to the enemy and to disease, and with urgent need of more holding space for patients. Malaria control was early under way; the 2/3rd Malaria Control Unit arrived at Finschhafen on 11th October. On the 14th the 2/3rd C.C.S. began to settle in to its new site at Simbang, tents were pitched and ward areas allotted. Some help was obtained from the 2/3rd Field Ambulance which supplied a medical officer and a detachment of O.Rs. and a few days later twenty natives were available for building huts. In spite of an early start the unit had difficulty in catching up with demands; patients poured in from the beginning, and were admitted to huts while the roofs were half complete.

JAPANESE COUNTER-ATTACKS

No sooner had full work begun in the C.C.S. than enemy activity flared up in a serious bid to recapture Finschhafen. The Japanese had withdrawn to the Sattelberg area and it was essential that this strong flanking position should be cleared. Sattelberg was a valuable stronghold, rising to an elevation of 3,400 feet and overlooking Finschhafen and Langemak Bay, and was linked with a steep high spur at Wareo. This was of almost equal elevation, and separated from the high ground north of Sattelberg only by the basin of the Song River. Thus the Wareo-Sattelberg area was of considerable military importance; the Japanese had concentrated a strong force there, and were reinforcing it by sea and land, no doubt with a view to counter-attack on Finschhafen.

Local air raids in the vicinity of the medical area had given warning of further attacks, and Intelligence information confirmed this. On the 17th a bombing raid on Finschhafen heralded an enemy attack from the sea, but the defenders were ready; enemy barges were sunk and all troops who landed were killed. A landward attack was still to come and later

on the same day this began. The Japanese attacked the headquarters of the 2/3rd Pioneer Battalion at Katika less than 3,000 yards west of Scarlet Beach. The battalion had to withdraw to a locality defended by the 2/28th Battalion in the Scarlet area. The divisional commander asked for the 26th Brigade to be sent forward.

MEDICAL UNITS UNDER ATTACK

On the next day the Japanese renewed the attack on Katika, where there was very heavy fighting. When direct approach to the beach was denied them they branched off to the north and to the south, and reached Siki Cove near Scarlet Beach. These moves threatened to be highly dangerous to the medical units. The light section of the C.C.S. and the M.D.S. of the 2/8th Ambulance were specially menaced. Already hampered by heavy rain some days previously, which had caused collapse of a ward and left water a foot deep in excavated areas, the light section was further required to admit more casualties than usual. This work was interrupted by bursts of automatic gun fire through the lines. The members of the unit armed themselves, and made a thin defensive line round the wards to protect the patients. In the early afternoon two mortar shells fell very close and evacuation of all patients was decided upon as the only wise course. All patients were accordingly carried by hand to the beach, where the staff of the C.C.S. loaded casualties on to barges. All equipment and personal gear were left behind, and the sick and wounded were taken by barge to the main body of the C.C.S. where they arrived just before dusk. This strained the resources of the C.C.S. greatly: there were then 285 patients held in hospital.

When these events began to occur the 2/8th M.D.S. was still in its original site at Katika, using the 2/11th A.D.S. as an evacuation centre. Light A.D.Ss. were in support of battalions; one had been sent on the 13th in support of the 2/13th Battalion for Simbang. On the 17th the 2/8th Ambulance, like the light section of the C.C.S., was attacked. Bombing stripped the ground on each side of the unit, but the medical area was hardly touched. No red cross was displayed where it could be seen from the air; one flag only hung at the entrance, visible from the ground.

As the 24th Brigade controlled Katika, the M.D.S. served this and the other brigade with their ancillary troops. On the following day the M.D.S. was attacked by enemy fire from rifles, machine-guns and mortars. Fighting was going on within 100 yards of the site on which active medical work was proceeding, and evacuation was imperative. Stretcher cases were carried to the southern end of the beach, and barges bringing material took back all patients to the 2/3rd C.C.S. at Simbang. The surgical team and the surgeons from the light section accompanied the patients and resumed their work on arrival at the C.C.S. Here they worked in conjunction for several weeks; fortunately there was not a great volume of surgical work. The remainder of the 2/8th M.D.S. and the light A.D.S. established a temporary dressing station with twenty beds on the beach

at the road to Sattelberg. All facilities for resuscitation were available at this post.

On the 19th an attempt was made to salvage material and equipment from the site of the M.D.S. on Scarlet Beach, but a good deal of looting had been going on, and much was lost. In the evacuation of patients from the medical area the detachment of the 2/11th Field Ambulance was of great assistance in collecting casualties at the beach point and placing them on the barges to the C.C.S. Help was also available from the 2/3rd Ambulance.

FURTHER ARRANGEMENTS

Certain other moves took place. The 26th Brigade Group embarked on L.C.T. and landed at Langemak Bay on the 19th, and the 2/11th Ambulance was relieved by the 7th Field Ambulance when the 42nd Battalion of the 5th Division relieved the 2/24th Battalion at Lae.

One change was made in the arrangements for medical evacuation: all battle casualties were to be sent to Buna by sea, but medical cases were to be retained as far as possible.

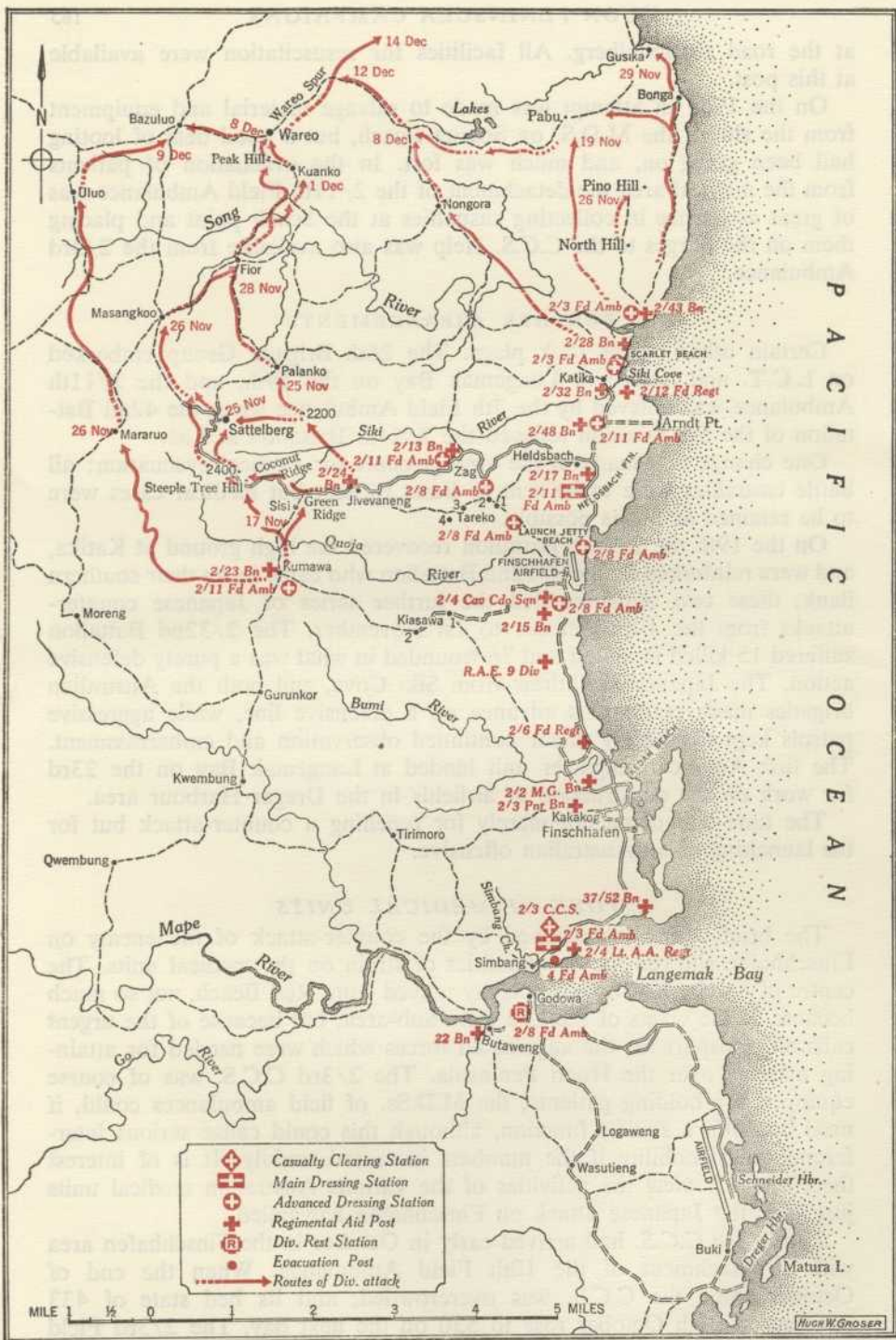
On the 19th the 2/28th Battalion recovered the high ground at Katika, and were reinforced by the 2/32nd Battalion who came in on their southern flank; these two units repelled the further series of Japanese counter-attacks from the 19th October to 1st November. The 2/32nd Battalion suffered 15 killed in action and 76 wounded in what was a purely defensive action. The Japanese withdrew from Siki Cove, and both the Australian brigades made continuous advance on a defensive line, while aggressive patrols kept the enemy under continued observation and embarrassment. The first American engineer unit landed at Langemak Bay on the 23rd for work on the construction of airfields in the Dreger Harbour area.

The time had come not merely for repelling a counter-attack but for the launching of an Australian offensive.

WORK OF MEDICAL UNITS

The brief actions occasioned by the counter-attack of the enemy on Finschhafen showed the potentialities of strain on the medical units. The centre of gravity had not completely moved from Red Beach, not so much because of the wants of the Lae Base Sub-area, but because of the urgent calls on transport for the augmented forces which were needed for attaining mastery over the Huon Peninsula. The 2/3rd C.C.S. was of course equipped for holding patients; the M.D.Ss. of field ambulances could, if need be, fulfil a similar function, although this could cause serious interference with mobility if the numbers increased unduly. It is of interest therefore to review the activities of the various Australian medical units just after the Japanese attack on Finschhafen had failed.

The 2/3rd C.C.S. had arrived early in October in the Finschhafen area with a detachment of the 10th Field Ambulance. When the end of October came the C.C.S. was overcrowded, and its bed state of 433 patients on 24th October rose to 530 on the next day. The 2/3rd Field



Medical dispositions, Finschhafen, 5th November

Ambulance afforded relief by taking fifty patients with malaria. It was also a great relief to the unit when on the 26th, night bombing ceased, at least temporarily, after having been continuous for weeks. The strain of night work was considerable, particularly when tent theatres had to be blacked out; convoys usually arrived about dusk. At Scarlet Beach the pyramidal tents were sunk about four feet to avoid bomb blast and splinters.

Preparation of food for troops on active fighting duty caused some problems, since open fires attracted enemy attention and smoke disturbed the patients for similar reasons. In the 2/3rd C.C.S. this was overcome by the construction of oil-water drip fires. Invalid foods were obtained with the help of Red Cross representatives. Shortage of some supplies caused occasional embarrassment; for example, supplies of fuel were insufficient to run the generator, and operations were performed using lamps run off batteries. Further assistance to the unit was given by the 2/8th Ambulance when at the end of the month this unit began to run a divisional rest camp, and took men convalescing after malaria.

The strain on the beds of the heavy section of the C.C.S. increased in the beginning of November; malaria was rising in frequency and gave more work in numbers of ways. Microscopic diagnosis with its exacting examination of slides was itself a considerable burden. The weather was very bad early in November, the heavy seasonal rains became torrential, and ruined the roads. A bridge was washed away on the road to the C.C.S., and patients actually had to wade in water up to their armpits at one time; others who arrived later swam the stream. The flooded condition of the roads caused again paradoxical difficulty in the carriage of water supplies. In the unit the strain of holding 530 patients was felt, and speaking generally the medical services found it hard to meet demands. Transport of patients was very troublesome at times. Patients arriving at Simbang Spit had to be carried three-quarters of a mile over the very bad road. On 12th November the usual malarial epidemic sequence was observed; simple increase of numbers of patients with malaria was now followed by an increase in average severity, so often a precursor of an outbreak of malignant tertian infection. Dengue fever, which was rife throughout the coastal area, was also increasing in amount.

The 2/3rd Field Ambulance had embarked at the mouth of the Burep River for Scarlet Beach on 18th October, and arrived there while the medical work was being done under disturbed and dangerous conditions caused by the Japanese attack. The unit detached Captain F. T. Rose and thirty-one O.Rs. to the 2/3rd C.C.S., where they helped with patients from the evacuated M.D.S. of the 2/8th Field Ambulance. Early in November this unit, like the others, noted the increase in incidence in malaria as more and more patients were admitted to the M.D.S. It may be noted that a diarist of this period remarked that malarial casualties were being kept in operational areas, but the wastage was none the less severe. This is true, but it was now a long time since the sending back of malarial patients to the mainland had been countenanced, and the fact

that such men were accommodated in the local units such as the 2/3rd C.C.S., the 2/3rd Ambulance M.D.S. and the 2/8th Ambulance rest camp, hardly affected the degree of wastage, though it may have partly concealed it. At the same time, the facilities for resting in the divisional rest camp allowed many men to regain enough vigour to return to their units within a reasonable period and without moving them outside the operational area. The unit's activities were next turned to the casualties resulting from the attack on Sattelberg.

The 2/11th Field Ambulance in the early part of October had closed Dorney's A.D.S. at Lae, and handed over to the 10th Field Ambulance, and on the 19th of the month embarked with the 26th Brigade Group in L.C.T., landing at Langemak Bay at night. When they arrived casualties caused by aerial machine-gunning of the barges arrived also, and were handled by Dorney and a party from the 2/3rd Ambulance, assisted by medical personnel from the 2/32nd Battalion who were near-by. Here they worked collecting casualties at a beach point and sending them by barge to the C.C.S. at Simbang whence they were sent on to Buna *en route* for Moresby. This beach post was then taken over by the 2/8th Field Ambulance, and the 2/11th set up its M.D.S. at Heldsbach plantation. This M.D.S. was designed to serve the Sattelberg-Wareo campaign and was conveniently situated, close to the harbour at Heldsbach, and near the junction of tracks to Katika, Sattelberg and Finschhafen. By 3rd November a well equipped operating theatre was erected, just in time to afford opportunities for work by the surgical team from the 2/7th A.G.H., Captains F. W. Connaughton and A. S. B. Studdy. Work could thus proceed in spite of extremely heavy rain which flooded the tents. The theatre was built of wood and iron salvaged by the R.A.E., lit by electricity and capable of being blacked out. A holding capacity of 150 beds was thought sufficient as it served a battle area, and undue expansion beyond reasonable reserve was thought undesirable.

There was little activity on local points during the next week, but the M.D.S. was expanded, and an A.D.S. under Captain P. W. Verco was set up alongside the R.A.P. of the 2/13th Battalion, in accordance with the practice found so useful previously. The road deteriorated further with heavy rain, and the road to Sattelberg was closed to traffic on the 15th. Immediately before the opening of an attack on Sattelberg, A.D.Ss. were set up with the 2/23rd, 2/24th and 2/48th Battalions. Some equipment was held in each of these, and arrangements were made for native bearers to be at a medical staging post at Kiasawa. The M.D.S. sent patients to the C.C.S. via the beach post at Langemak Bay.

The 2/8th Field Ambulance for a short time had maintained a depleted M.D.S. on Scarlet Beach after the Japanese threat, and carried on under shelter of a cliff. The rest of the unit was moved from the tense atmosphere of Scarlet Beach and assigned the useful duty of establishing and running a divisional rest and convalescent camp. Many convalescents from malaria were looked after here and enabled to rejoin their units. Many skin lesions were seen there also; the most commonly seen at the time was

a streptococcal bullous impetigo. The rest camp at first had 144 beds, but by the end of the month, Major P. A. Tomlinson had 216 beds in his charge.

The 10th Field Ambulance. A detachment of the 10th Field Ambulance accompanied the 2/3rd C.C.S. when this unit arrived at Finschhafen. In addition to its previous activities at Oro Bay and in the Buna-Gona-Sanananda area this ambulance ran an A.D.S. at Morobe and acted there as a sea-ambulance transport post. During the Huon Peninsula operations it really acted as a corps field ambulance except when detachments came under other command. Early in October Captain N. E. Brand and ten O.Rs. ran an evacuation post in Chinatown, Lae, for local patients, and then took over the 2/3rd Field Ambulance aid post and filled the role of a clearing station for Lae. During the period immediately before and during the Australian assault on Sattelberg, Wareo and Gusika, the 10th Field Ambulance continued to supply detachments for purposes of evacuation of sick and wounded. The changing battle fronts, the varied routes and methods of evacuation, by sea, land or air made this a very important function.

The 4th Field Ambulance. During November part of the headquarters of the 4th Field Ambulance came into Simbang and there, under the control of the A.D.M.S. 9th Division, engaged in work on evacuation of patients from the C.C.S. This additional help was valuable when the action on Sattelberg began.

PREPARATIONS FOR ASSAULT

On 2nd November the Allies were cheered to learn the official announcement that a landing had been made on Bougainville on the previous day by United States forces, to which the Japanese were unable to make an effective counter. The 26th Brigade had relieved the 20th Brigade on 6th November. Nine Matilda tanks were brought into the area with careful secrecy, for use for the first time in New Guinea. Morshead now assumed command of New Guinea Force, and Berryman the command of II Australian Corps.

The maintenance of supplies for the coming action was an important problem, intensified by the prevailing weather and its disorganisation of roads. Large dumps of supplies were provided, and special arrangements were made to fly 1,000 natives from the Markham Valley for special work as carriers on the supply lines. Some 600 were allotted for work with the 26th Brigade. It was of course fully recognised that there were many other difficulties to be faced, in particular those of transport and of the labour necessary for off-loading ships.

The medical units were to some extent shorn of their strength by the unavoidable dispersion of some of the ambulances to provide detachments, largely engaged in evacuation of sick and wounded. Two routes were practicable, one by barge to Buna from Langemak Bay and thence to Moresby, and one to Lae, with subsequent movement to Moresby, via Nadzab or direct. No accurate forecast of casualties could be made. During

the period of the enemy counter-attack on Finschhafen the Japanese losses had been very heavy; the 9th Division had lost 49 men killed and 179 wounded. The mounting toll of mosquito-borne disease, and the wide area over which malarial control work was needed increased that ever-present anxiety, man-wastage due to disease.

In the beginning of November more stabilisation was effected in the Finschhafen area. Clearing the Japanese from the Sattelberg track near Zag enabled contact to be resumed between the 2/13th and 2/17th Battalions, and Finschhafen itself was established as a Base Sub-area under Lieut-Colonel H. T. Allan, with Major C. H. Selby as D.A.D.M.S. A mobile surgical unit from the 2/7th A.G.H. was detached from the 2/3rd C.C.S. and was attached to the 2/11th Field Ambulance at Launch Jetty. At this time a considerable outbreak of dengue fever was encountered. The D.A.D.H. returning from an inspection of Tami Island reported that most of the sickness there was due to this cause. The 2/3rd C.C.S. was working under difficulty and was almost isolated by the nearly impassable roads of access and the flooding of Simbang Creek. The A.D.Ss. of the 2/11th Field Ambulance were set up to serve the 2/23rd, 2/24th and 2/48th Battalions, the last named being within the battalion perimeter at Kumawa with native bearers, and a staging post at Kiasawa. The M.D.S. of the ambulance sent patients by a post at Jetty Beach to the C.C.S. The remaining members of the staff of the 2/11th Ambulance arrived with their stores from G Beach. The repair of a Japanese barge enabled convalescents to be transported from the C.C.S. to the 2/8th Field Ambulance, and advanced dressing stations were set up to serve the approaching attack on Sattelberg.

The incidence of malaria was increasing. On 29th October the attack rate was 16 per 1,000, but a fortnight later it rose to 25 per 1,000. The R.M.Os. of static units were instructed to provide for the treatment of twenty to thirty men with malaria, and the congestion in the C.C.S. was such that 110 patients with malaria were sent by L.S.T. to Buna. The divisional rest station was expanded to take 350 men during the impending operations, for which medical preparations were completed on 16th November. The outline of the plan for the capture of Sattelberg and Wareo by the 9th Division provided that the 26th Brigade was to operate from the Kumawa-Jivevaneng area, using tanks. The 20th Brigade was to remain in the central sector in reserve, while the 24th Brigade engaged in vigorous offensive patrolling designed to drive the Japanese into the hills and distract their attention from the 26th Brigade. This would then give the 24th Brigade the opportunity to cut the enemy's supply line between Wareo and the coast, and further blows at communications could be dealt by aircraft and patrol torpedo boats.

THE DRIVE ON SATTELBERG AND WAREO

The 4th Brigade was despatched from Lae by small craft on 1st November and with the 22nd Battalion took over the defence of the area including Finschhafen, Langemak Bay and Dreger Harbour. As a pre-

liminary to the action the 2/48th Battalion occupied the road junction of Green Ridge and Sisi on the 16th, and the next day the brigade's advance began with an infantry move along the main Sattelberg road, supported by tanks. The assault opened with a heavy artillery barrage, and an air attack, to which the tanks added a powerful element of surprise. The roads were so cut up that patients had to be carried to Major J. L. Holme's A.D.S. at Zag; a bearer relay post in support was most helpful. The three battalions of the 26th Brigade made a simultaneous advance, and helped by the surprise of the tank attack captured Coconut Ridge and Steeple Tree Hill. Progress was slow, owing to the heavy jungle, with dense belts of bamboo confining the narrow tracks, winding over rough precipitous country. On the 19th headway was still being made, but slowly. The tracks were so slippery that help was needed from the troops in carrying wounded over the steep treacherous trail. Casualties came with a rush at one period from the "2,400 feature", one of the high points near Sattelberg, but on the 20th there were more men falling ill with malaria than wounded. Morris and Bolger were attached to the 2/11th M.D.S. as a second surgical team.

During the next two days the 2/23rd Battalion reached the Sattelberg road and the 2/48th cleared the 2,400 feature. Holme moved his A.D.S. at Kumawa back to Jivevaneng to help Verco. On the 22nd, landslides hampered movement of the tanks, but in spite of difficulties a satisfactory rate of advance was maintained. Captain J. C. Yeatman, R.M.O. of the 2/48th Battalion, was wounded. Battle casualties were few on the 23rd, but the 2/24th Battalion, though holding its positions, was not advancing. Work at the M.D.S. was increasing; 100 to 150 patients per day passed through the C.C.S., and extra assistance was obtained from R.M.Os. of the 2/2nd Machine Gun Battalion, 2/12th Field Regiment and a medical officer of the 6th Field Ambulance, who were attached for duty. Battle casualties increased in number from the infantry battalions on the 24th, and from then on were more severe in nature. The following day the Australians were showing signs of fatigue, but Sattelberg was completely occupied by the 26th Brigade on the 25th; the Japanese retreated beyond the Song River, and withdrew from Mararuo and Palanko, abandoning a quantity of equipment.

The position was much quieter on the 26th, but difficulties in evacuation had caused the numbers of wounded to increase in the forward areas. An A.D.S. at the 2,400 feature was moved to Fior, and the post at Zag was then closed. Twelve bearers were left in each aid post. Fortunately there were no casualties on the following day when the 26th Brigade was probing the country north to Fior and the Song River. The 2/23rd and 2/24th Battalions were now near Fior, but the evacuation route to the M.D.S. could only be negotiated by native bearers over long steep inclines. Captain D. C. Pope took over the duties of Captain Yeatman as the medical officer of the 2/48th Battalion. In a subsequent report Pope summed up the problems of evacuation in this action as follows:

Evacuation was often difficult from the companies and frequently there were long carries over rough country. The bearers worked excellently—several times under fire—and on one occasion were deliberately fired on when removing a patient by stretcher to the R.A.P.

Patients at times were tied to the stretchers to prevent them from slipping. It was found necessary to establish relay posts on account of long carries and the difficult nature of the terrain. The personnel of the A.D.S. were used in these relays, which were maintained throughout the action. There were eight A.D.S. personnel permanently attached to the R.A.P.: they were relieved as often as possible. No carrying was performed by natives. At times it was possible to use jeeps for evacuation of patients from companies to the R.A.P. It was never necessary to hold patients at the R.A.P. or A.D.S. Evacuation from the R.A.P. was always rapid; patients were either carried along the road or taken by jeep to the A.D.S. A jeep was on call at brigade headquarters to evacuate patients from the A.D.S. It never took longer than ten to fifteen minutes to reach the A.D.S. Evacuation was aided considerably by vehicles returning from bringing forward rations and ammunition. Canvas stretchers were used on several occasions—they were found much easier to handle if the width was decreased by 10 inches.

The incidence rate of malaria was still gradually rising, and the calls on the medical units were heavy. The remainder of the 4th Field Ambulance had rejoined the unit at Simbang a few days previously, and on the 25th, when the brigade had captured Sattelberg, the 2/2nd C.C.S. relieved from its staging task at Morobe, arrived from Godowa at Heldsbach, where it was able to open to receive patients on the 30th. This unit was welcome, as the 2/3rd C.C.S. had sustained a heavy and constant burden, increased by the rising numbers of casualties from the fighting at Sattelberg. The 2/11th M.D.S. passed on many patients to the 2/3rd C.C.S., and the 2/3rd Ambulance was able to help substantially in the holding of patients as its dressing station in the Finschhafen area, on the coast of Langemak Bay, was not functioning as a fully active M.D.S. The 2/8th Ambulance had already expanded its rest camp to meet requirements. The beginning of December saw large numbers of sick and wounded treated each day at the 2/11th M.D.S. The A.D.Ss. in support at Jivevaneng and Sattelberg were busy, the former holding a number of men convalescing from malaria. On the second of the month the M.D.S. received many sick with malaria, and battle casualties were evacuated from the three brigades. Minor casualties were moved by jeeps of the Army Service Corps, and the more severe injuries went to the A.D.S. at Sattelberg. Meanwhile the sick rate within the medical units themselves was increasing: some 70 per cent of the medical officers in the division were believed to have malaria at the end of November.

PABU RIDGE ACTIONS

During this time work at medical units was increased by operations in another sector north and east of Sattelberg, whose pivotal point was Pabu Ridge. This high point was on the line running from Wareo to the coast; it was specially important since along it ran the Japanese line of communication linking with a sea line of great value. Hence the 2/32nd Battalion was engaged in actions designed to cut it. Pabu Ridge had been subjected to constant attack by the Japanese, but the 2/32nd Battalion



An R.A.P. near the Burep River.

(Major P. Kaye)



Captain P. Kaye attending casualties west of the Busu River during the Lae campaign.

(Major P. Kaye)



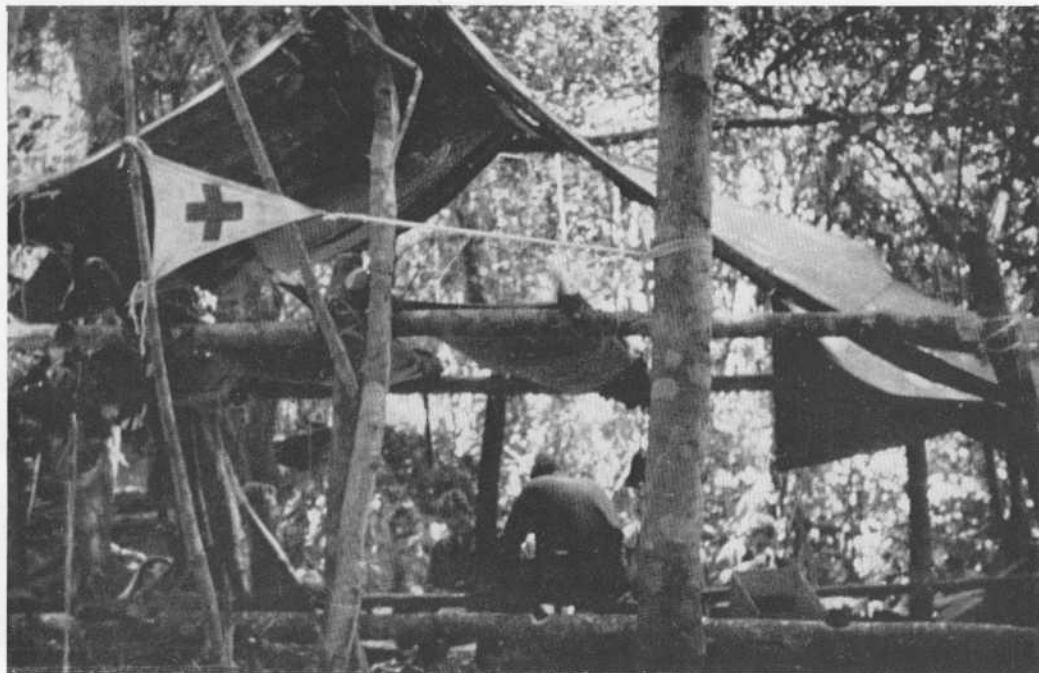
Australian troops landing at Scarlet Beach.

(Australian War Memorial)



Wounded being evacuated by jeep down a bogy Sattelberg track towards Finschhafen.

(Australian War Memorial)



The A.D.S., 2/3rd Field Ambulance on the Bonga-Wareo track.

(Major P. Kaye)



The R.A.P., 2/32nd Battalion at Pabu Ridge. It consisted of a shallow trench covered with timber and earth.

(Major P. Kaye)



(Major P. Kaye)

Evacuation of a patient with a gunshot wound of the chest on the Bonga-Wareo track. Note the improvised stretcher and back rest to maintain some sort of semblance to semi-Fowler's position.



(Major P. Kaye)

Stretcher bearers of the 2/3rd Field Ambulance manhandling wounded from the 2/32nd Battalion along a jungle trail in the area north of Scarlet Beach.

took the ridge as part of the 24th Brigade's objective of the Gusika-Lakes area. The Japanese delivered a counter-attack on the 22nd; this was only partly successful, but though they suffered heavy losses from ambushes and direct attacks, they were able to cut the battalion's supply line. Captain P. Kaye, R.M.O. of the 2/32nd Battalion, pointed out that the medical services were here confronted with conditions different from those of previous operations, and summarised his experiences as follows:

Under command for this enterprise was a detachment of the 2/3 Field Ambulance in charge of Major Dorney. This was indeed fortunate, for the battalion medical personnel were depleted in numbers. There were only four regimental stretcher bearers at the outset, and they were sorely overtaxed. Thus stretcher bearers from the ambulance were used as R.S.Bs., while the presence of a second medical officer aided the R.M.O. considerably.

The R.A.P. and the A.D.S. were sited alongside each other, the original medical post being simply a cleared strip of ground near the east side of the perimeter. With the advent of shelling, this was established in a shallow trench. The A.D.S. consisted of a rough shelter to accommodate about twelve patients and at the outset, this was rapidly filled with malaria cases under treatment. On the second night following the capture of the ridge, the enemy opened fire with artillery at point-blank range. Numerous casualties were occasioned, particularly in the "A" Company area, and it was 0100 hours on the following morning before the last of these received attention. Conditions at night were extremely difficult for only shadowed lights could be shown with any degree of safety.

For the following ten days, the enemy repeatedly attacked and shelled the small area intensively, and our casualties mounted daily. Unfortunately, both medical posts had been badly sited and offered no protection. It seemed that both were in the direct line of fire of the enemy guns, and "air-burst" type of missile was used, attending to the wounded became hazardous and extremely difficult. Early, the enemy mortared the position and with a direct hit completely demolished the R.A.P. and killed a bearer from the ambulance detachment.

It was now essential to maintain the battalion by air-dropping, and stringency of supplies affected also the work of the medical services. When the R.A.P. was demolished at this early stage in the action, practically all medical equipment was destroyed, and for a time only dressings of make-shift type and some captured from the enemy were available. After some days air-dropping relieved the situation, and parachutes were used with great success to bring even fragile material to the beleaguered Australians.

One of the major problems of the medical officers was evacuation of sick and wounded. The risks were too great at first to send out wounded, partly because of the intrinsic dangers of the position, and partly because the native bearers could not be thus exposed. For three days, therefore, the wounded were kept in the battalion lines, attended as assiduously as possible under the close supervision of the medical officers. This nursing was performed under extreme difficulties, but fortunately only one man was re-wounded while the patients were in a relatively exposed area. They showed great fortitude in their unhappy plight of being helpless under bombardment. Native bearers were once more employed when a short and safe supply line was practicable. On the third day a company carried out wounded to North Hill, pending the execution of a plan

which aimed at capturing Pino Hill, and which was carried out successfully on 26th November. One company of the 2/32nd Battalion, with the help of the tanks, then had the satisfaction of establishing a safe line of communication to Pabu. This company had been near the Song River, taking part in the defence against the abortive Japanese counter-attack on the battalion's rearward positions, and also in the attack to secure Pino Hill. Contact was thus established with the Pabu garrison, but further measures were necessary before the enemy forces were overcome in this sector.

THE TAKING OF WAREO

After Sattelberg had been occupied by the Australians their next move was north, and their goal Wareo Spur, a prominent and important feature several miles inland from Gusika on the coast, and north of the Song River. The track from Sattelberg to Wareo ran through Palanko and Fior to other high ground at Kuanko and Peak Hill.

With additional native labour from Lae, the 4th Brigade was released from the work of unloading ships in Finschhafen and the special help of seven tanks and a detachment of an engineer special brigade was made available for an advance to Fortification Point on the coast north of Gusika. The 26th Brigade was now assigned the task of taking Wareo, and the 24th Brigade the Bonga-Wareo track, with the 20th Brigade in reserve. The 2/28th Battalion with tank support took Gusika and made further contact with the garrison at Pabu, and the 2/43rd Battalion reached the Lakes while the 2/23rd Battalion advanced north from Sattelberg and crossed the Song River and took Kuanko on 1st December. With further advance of the 2/4th Commando Squadron into the hills of Kulungtufu an important Japanese source of food supply was seized.

A few days later the Australian advance along the coast began, and in spite of strong resistance of the enemy to advances of infantry and tanks, and his occupation of log strongholds, the 2/24th Battalion out-flanked the Japanese and on 8th December Wareo was occupied, while vigorous patrols pursued the retreating enemy up the coast.²

MEDICAL CONDITIONS AT PABU

Many of the battle casualties seen at Pabu Ridge were of serious degree. Wounds caused by large shrapnel splinters were common; they occurred in all parts of the body, and were associated with great tissue damage, and frequently with bleeding and severe shock. Compound fractures were common also, and many wounds were fly-blown; this tended to keep the wounds clean, though the patients felt some discomfort. Numbers of fatal bullet wounds of head and chest were encountered. The chest wounds were in the main of the "sucking" type, and often caused death within forty-eight hours. Two cases of gas gangrene were seen, a reminder

² Australian casualties for the Huon Peninsula campaign 22nd Sept 43-20th Jan 44: killed in action 32 officers, 421 other ranks; wounded in action 53 officers, 1,113 other ranks.

of how this dangerous infection always lay in wait in the New Guinea soil. Medical supplies were more plentiful once the supply line through Pino Hill was open, and supplies of drugs and dressings were obtained in greater quantity than could be expected from air-dropping. Water supply was a difficult problem; carrying parties provided a limited amount from a source 1,000 yards away. The Japanese also suffered in a similar manner, for they were using the same water point, and in order to secure it each time for their own use a covering party of Australian riflemen held the opposite bank of the stream while supplies were drawn. The supply was too restricted to help appreciably in satisfying the needs of sick patients or even in keeping the men clean. As a result "tropical" sores were common at an early stage. The general health of the men was good on the whole, apart from some malaria and dysentery, and a considerable degree of exhaustion due to both physical and mental causes. Though the men on their relief marched back to North Hill, many felt this a strain, yet thirty-six hours later, when need arose, they went into action again without hesitation. Shell dressings were not found a great success, as they did not fit on some wounded areas: vaseline gauze and sulphonamide powder were usually preferable. In spite of the extemporisations and hand-to-mouth state of supplies at certain stages, and the greatly enhanced risk of wound infection, the results were satisfactory. The lessons which emerged from this brief experience were the value of the combination of the regimental aid post with an advanced dressing station of a field ambulance, the greater efficiency of parachute dropping of medical supplies as contrasted with free dropping, and the selection of a bare minimum of equipment for an R.A.P. The sharpest lesson of Pabu Ridge was the necessity for providing all possible protection for actual and potential casualties.

COASTAL ADVANCE

After the occupation of Wareo the 9th Division was reorganised so as to permit the advance by the 20th and 26th Brigades, leaving the defence of the Wareo-Sattelberg area to the 24th Brigade. The 4th and 20th Brigades took up the task of pushing the Japanese up the coast to the north. For some time the retreating force showed stubborn resistance along the track from Wareo to Lakona, but the protection of the lines of communication by the 20th Brigade allowed the 4th to press on, and by 20th December the brigade, with the support of Matilda tanks and artillery, cleared the Masaweng area of Japanese and occupied the high features of Fortification Point. On the 21st, the 20th Brigade passed through the 4th in pursuit of the retreating enemy, and was supplied by small craft. The Japanese were then unable to do more than concentrate on their withdrawal up the coast. Their retreat was further hastened by the activity of Allied aircraft and by patrol torpedo boats. The light naval depot for these craft had been moved from Morobe to Dreger Harbour, which enabled them to operate as far as Sio. This hampered the enemy in his withdrawal, in which he could not use his own sea-craft

to advantage, in spite of his efforts in attacking sea patrols by guns mounted along the coast. Quantities of abandoned guns were seized as the victorious troops swept up the coast, which was littered with damaged barges.

On 2nd January the Australians had reached Sialum and the 126th United States Regiment then made a landing at Saidor with the purpose of securing a base from which to launch further operations by sea and air. By the 7th an airstrip was in use, and the Japanese, unable to cope with the strengthened position at Saidor were forced inland, where in the inhospitable rugged country, weakened by lack of rest and food many succumbed to exhaustion and endemic disease. On the 15th the Australian coastal force had made further advances and occupied Sio.

Colonel Dawkins had taken over from Colonel Lovell as A.D.M.S. of the 5th Division on 1st January. The 5th Divisional Command was held in readiness to take over the advance beyond Sio, and on the 16th, an advance party of the headquarters of the division came from Lae by small craft to Finschhafen. The 8th Brigade was moved from Australia to relieve the 20th; on 20th January this relief was effected, and the headquarters of the 5th Division which had been administering the Lae Base Sub-area took over from the 9th Divisional Headquarters.

The 4th Field Ambulance moved to Sialum by barge and established a beach post and an M.D.S. By midnight of the day of movement, 7th January, there were 158 patients in the M.D.S., nearly all with dengue fever. A surgical team was attached to this unit. On the 11th there were 234 patients, some with unconfirmed malaria, but only a few battle casualties. Those with malaria were sent to the 2/2nd C.C.S. at Finschhafen by schooner. Patients for the 4th Field Ambulance were picked up by jeep transport which called twice daily at the 2/15th, 2/17th Battalions and the 20th Brigade for evacuation to the M.D.S. Transport by barge was difficult at this time as most of these craft were undergoing repairs. A section of the 2/11th Field Ambulance was attached to the 2/24th Battalion, and joined another from the 2/8th Ambulance early in January to help in evacuating from Sialum. On the 13th a party of the 2/8th Ambulance reached Kelanoa Point by road, and found the beach fouled by dead bodies, an indication of the condition of the enemy's force. The 4th Ambulance on that day held 250 patients.

The 2/15th Ambulance, commanded by Lieut-Colonel L. G. Hill, arrived at Finschhafen on the 16th January, and the headquarters party went on to Kelanoa and established an M.D.S. there. By the end of the month the M.D.S. had expanded to 400 beds, and there were 160 patients mostly with malaria and dengue. The unit had a surgical team attached from the 2/7th A.G.H., and a medical consultant, Lieut-Colonel H. R. Love. Evacuation from the 2/15th was by barge, and was somewhat of an ordeal, therefore the minor sick and the seriously ill were held for a time.

Since the end of 1943 dengue had been an important cause of illness, and it was reaching epidemic proportions. Some confusion occurred with

malaria, especially when parasites appeared in the blood, but the A.D.M.S. pointed out that it could be presumed that a high percentage of troops had a suppressed malarial infection, which was brought to light by an attack of dengue.

In order to bring the Australian forces at Sio into contact with the American forces at Saidor, some union between the two had to be effected over a distance of some seventy-five miles of rough country containing some 7,000 Japanese troops. This coastal strip was narrow, intersected by many rapid streams, and rose quickly into the mountains by terraces covered with kunai or thick forest. At Kelanoa the conditions were pleasant for troops: this area came into use for troop concentration, and special attention was given to its hygienic aspects, especially malaria prevention, since this coastal zone was hyperendemic. Hookworm was almost universal among the natives, and already this infection had been found in considerable density among Australian troops returned to the mainland, particularly those admitted to hospital. Dysentery was common also in the area, but preventive measures and the use of specific medication for clinical infections reduced its importance to a low level.

The task of joining forces was not so formidable as might appear, for the enemy's morale was lowered in proportion to his physical state and his available supplies, now further threatened by the American advance. On 25th January the advance was resumed by the 5th Division, preceded by probing patrols from the Papuan Infantry Battalion. Many Japanese were found dead on the tracks, and many more were taken prisoner. Some 267 Japanese were killed during the advance from Sio, and over 1,000 were found dead. Only eight Australians were wounded; medical problems were therefore those of regional or seasonal disease.³

A more serious difficulty than the enemy was that of supplies for the advancing force. The weather had deteriorated with the monsoonal changes, and strong winds from the north-west raised rough seas which made it difficult for the small craft to land supplies on the beaches. In order to counter this risk of failure of food, the forward troops carried five days' rations to be used in emergency. At the end of January the medical units were disposed as follows: M.D.S. 2/15th Field Ambulance at Kelanoa; M.D.S. 4th Field Ambulance at Sialum; beach detachment 2/8th Field Ambulance at Nambariwa, and beach detachment of 4th Field Ambulance at Wasu.

On 8th February the Australians approached Saidor by land and sent an advance party by sea, and two days later the Australian force made contact with the American force at Yagomi. Patrols were sent over the inland tracks to dispose of Japanese stragglers on the flank.

At this time an outbreak of malaria was noted in the 30th Battalion; a death occurred from cerebral malaria on the 12th and another on the 14th. Dengue fever was occurring also, pointing to insufficient adult mosquito control. It was found that troops arriving at beach posts seldom had

³ Australian casualties Sio to Saidor 21st Jan-10th Feb: killed in action 1 officer, 3 other ranks; wounded in action 1 officer, 7 other ranks.

nets, and the staff of these posts had to carry a reserve of twenty nets. The causes of this circumscribed epidemic were chiefly disciplinary; it was known that clothing rules had not been correctly followed. Experience with both malaria and dengue also showed that a frequent sin of omission was neglect of war against adult mosquitoes within individual units.

Early in February penicillin was used for a patient with septicaemia in the 2/3rd C.C.S., its first use in this unit. Investigation had been proceeding in the field units under supervision of Colonel Littlejohn along lines similar to those pursued by Dr Howard Florey. Instead of the standard method of wide excision without suture, wide excision was used with local application of 20,000 units of penicillin, dusted on with sterile sulphanilamide powder as a vehicle, and primary suture was then carried out with undercutting of the skin edges if required.

Another C.C.S. arrived during the month, the 106th commanded by Lieut-Colonel A. H. Powell, the advance party reaching the 2/2nd C.C.S. on the 13th: the main body arrived at Heldsbach on the 19th. On the 22nd, the 106th opened and the 2/2nd C.C.S. closed. During this month the 4th Field Ambulance moved from Sialum to Gusika to take over the M.D.S. and the A.D.S. at Wareo from the 2/3rd Field Ambulance. Battalions of the 8th Brigade advanced in rotation on foot along the coast, supplies and medical evacuation being maintained by small beach posts established by barge, and leap-frogging every two days' march.

On 5th March the 5th Division headquarters moved back to Kiligia and assumed command of the 4th Brigade. "A" Company of the 4th Field Ambulance, which had been in Milne Bay, was brought up to extend the rest camp: the surgical team was returning to its parent unit. The M.D.S. of the 2/15th Ambulance was now working at Kiligia. Early in April the Headquarters of II Australian Corps was ordered to proceed to Australia, after relief by the I Australian Corps. Plans were made for the 5th Division to go forward from the concentration areas to Saidor, one brigade to garrison Saidor, and one to push along the coast to Madang. Accordingly the 5th Division moved on 22nd April from Kiligia to Saidor by Liberty ship, destroyer, L.C.M. and aircraft, and some troops pressed on at once to Bogadjim and thence to Madang.