THE HEALTH AND MEDICAL CHALLENGES OF FIGHTING IN PAPUA

by Ian Howie-Willis OAM, MA, PhD, FRHistS, KStJ

Paper presented to 'The Bloody Beachheads: The Battles of Gona, Buna and Sananda' conference of Military History and Heritage Victoria Inc., East Malvern RSL Club, Melbourne, Saturday 25 September 2021

THE HEALTH AND MEDICAL CHALLENGES OF FIGHTING IN PAPUA

by Ian Howie-Willis OAM, MA, PhD, FRHistS, KStJ[1]

Paper presented to 'The Bloody Beachheads: The Battles of Gona, Buna and Sananda' conference of Military History and Heritage Victoria Inc., East Malvern RSL Club, Melbourne, Saturday 25 September 2021

The Pacific War in Papua during 1942–1943 was a 'medical' war. That is, it was one in which many and diverse kinds of battlefield injuries combined with extraordinarily high wastage from infectious diseases, principally malaria, to impose a heavy burden on Army Medical Service personnel.

The effects of such a medical war are evident in the official medical histories of the war. Allan S. Walker, the official Australian medical historian of World War II, devoted the first seven chapters of his magisterial volume *The Island Campaigns* (1957) to the war in the Territory of Papua.[2] The remaining nine chapters were on the war in the Territory of New Guinea and in Borneo.

The first of the seven 'Papuan' chapters describes the outbreak of the Pacific War in December 1941 and the rapid Japanese advance through the archipelagos to Australia's near north. The second deals with the Australian retreat along the Kokoda Track to Imita Ridge. The third is on events in Port Moresby. The fourth tells the story of the campaign to retain Milne Bay. The fifth reverts to the conflict along the Kokoda Track, describing the Australian advance back up the track from Imita Ridge to Wairopi north of Kokoda. The sixth discusses the struggle for the Papuan north coast, namely the battles for the beachheads at Gona, Buna and Sanananda. And the seventh is devoted to the devastation wrought by malaria.

These of course are chapters describing the situation facing the Allies' medical services, not the military campaigns *per se*. For the latter, if it's the official histories you're interested in, you must go to Lionel Wigmore's *The Japanese Thrust* and Dudley McCarthy's *South-West Pacific Area: First year, Kokoda to Wau*.

And this paper, too, focuses on the medical services. As the title suggests, 'The health and medical challenges of fighting in Papua', the paper emphasises the medical rather than the military task during the Papuan campaigns of 1942–1943. To put the medical war in context, however, reference to the military campaigns is necessary.

1. The Japanese advance into the South-West Pacific Area

The Pacific War began with the Japanese air raid on the US naval base at Pearl Harbour, Honolulu, on 7 December 1941. During the ensuing war, Australia and its

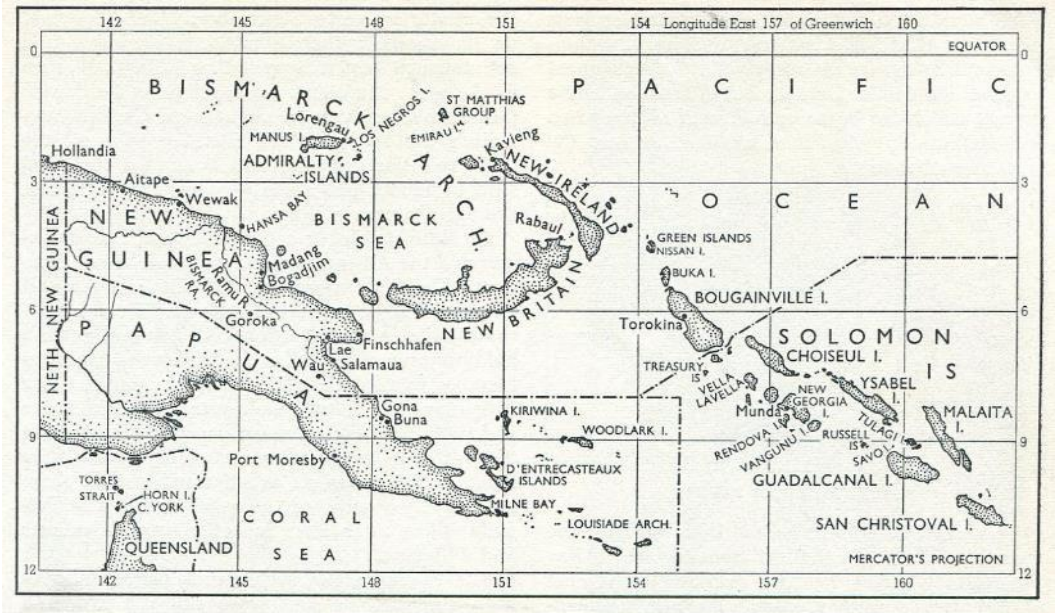
[1] Dr Ian Howie-Willis is an independent professional historian. He was born and grew up in Melbourne but has lived and practised in Canberra since 1975. He lived in Papua New Guinea for nine years during the 1960s and 70s, successively in Wewak, Lae and Port Moresby. His most recent book is a study of Operation Postern, the recapture of Lae and Salamaua from the Japanese in September 1943, due for release on the 80th anniversary of the recapture in 2023.

[2] Before Papua New Guinea achieved independent nationhood on 16 September 1975, Papua was an Australian external territory. Formerly a British protectorate and called British New Guinea from 1884, Papua became an Australian possession in 1906. Australia held the Territory of New Guinea, a former German colony, under a 1920 mandate from the League of Nations. From 1942, when the Australian Army took over the wartime government of the two territories, they were administratively amalgamated. Though technically separate territories, they were run as one for the next 33 years until independence.

external territories of Papua and New Guinea were within a theatre the Allies called the South-West Pacific Area (SWPA). This huge region encompassed the Philippines, Borneo, Java and the eastern islands of present-day Indonesia (then the Netherlands East Indies) plus the north-western islands of the Solomons archipelago.

The Japanese advance into the SWPA began with the invasion of the Philippines on 22 December 1941. They captured Manila, the capital, on 2 January 1942. They bombed Rabaul on New Britain, pre-war capital of New Guinea, from 20 January; then landed troops there on 23 January. They bombed Port Moresby, capital of Papua, for the first time on 3 February. On 8 March their troops landed on the New Guinea mainland, occupying Lae and nearby Salamaua. The Australian territories invaded by the Japanese are show in the map in Figure 1 below.

Figure 1: The Territories of Papua, New Guinea & the British Solomon Islands Protectorate



Source: the map 'Papua, New Guinea and the Solomon Islands' in the article 'South-West Pacific April 1942–March 1943, The Australian Encyclopaedia Volume IX (Angus & Robertson, Sydney & Melbourne, 1958), p. 427.

After establishing control over the archipelagos and along the New Guinea coast, the Japanese planned to safeguard their conquests and further isolate Australia by taking Port Moresby, on the southern coast of Papua. They then intended to capture New Caledonia, Fiji and Samoa. To take Port Moresby, a sea-borne invasion force sailed from Rabaul on 4 May 1942, supported by a fleet sent from Truk in the Caroline Islands, north of New Guinea.

A combined US-Australian fleet intercepted the Japanese armada in the Coral Sea, between the Louisiade Archipelago (east of Papua) and the Solomon Islands. An unusual naval engagement remembered as the battle of the Coral Sea ensued on 7 and 8 May. Unlike previous naval battles, it was fought by ships that neither came within sight of, nor fired their guns directly at, each other. Instead, the attacks were mounted by aircraft from the aircraft carriers of the opposed fleets, supplemented by aircraft from the land air bases of both sides.

Although the US-Australian fleet lost more ships (three) than the Japanese (one), the outcome was a tactical victory for the Allies, because the Japanese convoys broke off the fight, returned to Rabaul and Truk, and abandoned the plan to take Port Moresby from the sea. For the Allies there was the additional benefit of a boost to morale, because the Coral Sea battle represented the first serious setback the Japanese had suffered in the six months since their sweep across south-east Asia and the Pacific had begun.

A month after Coral Sea battle, the Japanese experienced a more serious naval setback in the battle of Midway. Fought between 3 and 6 June near Midway Atoll in the northern Pacific, this battle cost the Japanese four aircraft carriers, a cruiser, a destroyer, and about 250 aircraft. The US lost one aircraft carrier and about 150 aircraft. Coming so close together, the Japanese naval losses in the Coral Sea and at Midway comprised a major strategic defeat for Japan. Though the Japanese for a time retained local naval and air superiority in the vast region they had conquered, they lacked the naval power to mount large-scale invasion forces such as that turned back in the Coral Sea. With the defeat at Midway they effectively lost, and never regained, the initiative in the Pacific War. Their armies, however, remained fiercely aggressive.

The enemy's determination soon became evident. Denied a seaward invasion of Port Moresby, the Japanese set out to take the city from the land. This involved establishing beachheads on the north coast of Papua at Gona and Buna, then pushing inland to Kokoda in the foothills of the Owen Stanley Range, the south-eastern extension of the central cordillera that runs some 3000 kilometres along the entire length of the island of New Guinea. From Kokoda, they intended crossing the range to Port Moresby.

The Japanese could hardly have chosen a more difficult task. Like much of the cordillera, the Owen Stanleys are high, precipitous, and covered by dense tropical rainforest. The route over the range used by European settlers before the war was the Kokoda Track. This rough, meandering footpath runs between Owers Corner, above the coastal plain 50 kilometres from Port Moresby, and Kokoda, a pre-war government patrol post above the Mambare River, roughly midway across the Papuan peninsula. The distance between Owers Corner and Kokoda is 95 kilometres. Now, as in 1942, most of the track is impassable to motor vehicles. Apart from the range's alternating razorback ridges and deep valleys, the climate is typically wet tropical, with annual rainfalls averaging a huge 3.6 metres. The torrential rains feed innumerable swift streams that rise rapidly after each downpour.

2. The military-medical situation in Papua and New Guinea in 1942

The largely futile attempt at keeping the Japanese out of Papua and New Guinea began with the establishment of garrisons at Rabaul and Port Moresby during 1941. The Rabaul garrison, built around the AIF's 2/22nd Infantry Battalion, eventually increased to about 1,400 troops by the end of the year. Port Moresby was garrisoned with a larger, three-battalion force from the 30th Brigade, a militia formation. By late January 1942 the garrison there numbered about 6,500 combat troops, supplemented by maintenance and construction units.

Preliminary medical arrangements for supporting the Rabaul and Port Moresby garrisons were set in place nine months before the Japanese entered the war. The then Director General of Medical Services (DGMS), Major General Rupert M. Downes, visited both territories in March 1941 to assess the medical facilities there. In Rabaul he dealt with the senior government health officer, Dr Edward T. Brennan, who later

joined the Army. (As a lieutenant colonel, Brennan served briefly as the Assistant Director of Medical Services (ADMS) of New Guinea Force, the formation established in April 1942 to prosecute the war against the Japanese in Papua and New Guinea.) Brennan arranged for the garrison troops to be treated in the local civilian hospital.

In Port Moresby, Downes arranged for huts to be used as a temporary hospital until a permanent military hospital could be established. In the weeks after Japan's entry into the war, the 3rd Field Ambulance was sent from Australia to serve the needs of the garrison and other army units arriving in Port Moresby.

a) The Army Medical Service hierarchy of Medical Officers

At this point, readers need to be familiar with the Army Medical Service (AMS) hierarchy. The AMS was led and run by medical officers of the Australian Army Medical Corps (AAMC), all of whom were medical graduates. In charge of both the AMS and the AAMC was the Director General of Medical Services (DGMS) who had the rank of major general. The next position down was Director of Medical Services (DMS), also a major general, who commanded the medical services of an army in the field. Below the DMS was the Deputy Director Medical Services (DDMS), a brigadier commanding the medical services of a corps, i.e. a formation comprising two or more divisions. Under the DDMS was the Assistant Director of Medical Services (ADMS), a colonel in charge of the medical arrangements for a division. Below that was the lieutenant colonel commanding a Field Ambulance, of which there were generally three in each division. At the lowest level was the major or captain who was the Regimental Medical Officer (RMO) of an infantry battalion or artillery regiment.

b) The casualty evacuation chain

Since World War I, the AMS had followed a multi-stage procedure for evacuating wounded and sick troops from the front line to medical treatment centres in the rear. The procedure was borrowed from British practice in the Royal Army Medical Corps.

The basic unit for delivering medical services to the battlefield was the Field Ambulance, which was a mobile medical unit not a vehicle (though it had vehicles — jeeps and ambulance vans). The Field Ambulance comprised about 120 men divided into medical (treatment) and bearer (transport) sections. As well as its CO, it usually had three medical officers, who were majors or captains. The other ranks included drivers, stretcher-bearers, and medical orderlies, who ideally had prior first aid experience and qualifications such as St John Ambulance first aid and home nursing certificates. In forward areas the Field Ambulance established Main (larger) and Advanced (smaller) Dressing Stations (MDS and ADS) to provide treatment to the wounded and sick before such casualties were evacuated to a Casualty Clearing Station (CCS) in the rear. Between the ADS, the MDS and the CCS, the Field Ambulance usually set up Bearer Posts, at which casualties could be checked, rested and given a hot drink.

Near the front line was the battalion's Regimental Aid Post (RAP), staffed by the RMO and his medical orderlies. The task of the RAP was to give immediate treatment, triage casualties, dress wounds and administer morphine painkillers before sending the wounded back to an ADS or MDS for further treatment.

Several kilometres behind the dressing stations was the Casualty Clearing Station commanded by a lieutenant colonel. The CCS was a large, static medical facility capable of holding up to 300 patients. Usually occupying tents or huts and ideally situated adjacent to transport facilities (highway, railway station, airstrip or wharf), the CCS treated serious cases and cared for them until they could be transported back to hospitals in the rear. Less serious cases were treated in the CCS before being returned to their units. The CCS usually included a specialised surgical team.

Well to the rear was the semi-permanent Australian General Hospital (AGH), typically a 1,200-bed facility which could be expanded to hold 2,000 or more patients. Commanded by a colonel, it was usually located near the Army's main base, which in Papua was Port Moresby and later Lae in New Guinea. The establishment of an AGH provided for about 30 medical officers of the AAMC, 70 female nurses from the Australian Army Nursing Service (AANS), and 200 AAMC male medical orderlies. As with large civilian hospitals, the AGH provided a range of specialised medical and dental services, and it could treat long-term patients suffering battlefield wounds and/or diseases. Where necessary, patients could be returned to Australia for further treatment in the large metropolitan base hospitals at Concorde (Sydney), Greenslopes (Brisbane), Heidelberg (Melbourne), Daw Park (Adelaide) and Hollywood (Perth).

c) <u>Inadequacy of the medical arrangements at the time of the battle for the Coral Sea</u>

At the time of the battle for the Coral Sea, 4–8 May 1942, the AMS's medical provision for Papua amounted to little more than the 3rd Field Ambulance in Port Moresby. After the battle more Army Medical Service (AMS) units began arriving. On 3 June the hospital ship *Wanganella* arrived, bringing the 5th Casualty Clearing Station and 14th Field Ambulance.

Figure 2: The 3rd Field Ambulance, a militia unit, the first Australian medical unit sent to Papua New Guinea in 1942 in response to the Japanese invasion. The unit is pictured here in camp at

Woodside, South Australia in 1940. (Source: Australian War Memorial photograph P00440.002.)

These arrangements were inadequate. Until the Japanese established their beachheads at Gona and Buna on 21 July 1942 and then captured Kokoda on 29 July, however, their intentions were not clear. Could a Casualty Clearing Station and two Field Ambulances have sufficed if the Japanese had not established their Papuan beachheads and begun advancing south along the Kokoda Track?

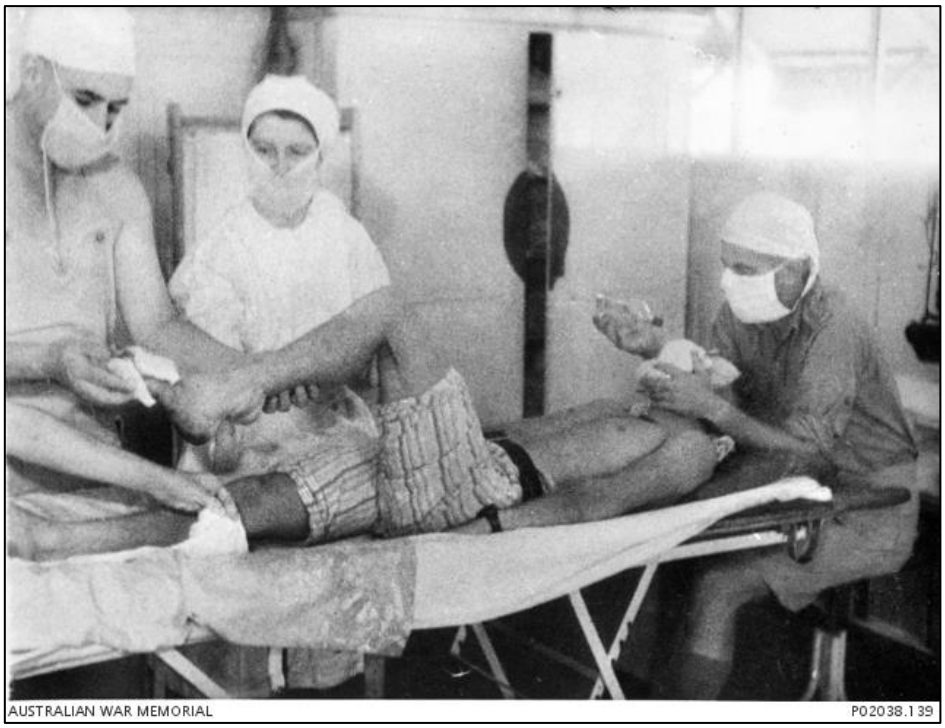


Figure 3: A 5th Casualty Clearing Station surgeon, nurse and anaesthetist operating on a patient who had suffered bayonet wounds on the Kokoda Track, Port Moresby 1942. (Source: Australian War Memorial photograph P02038.139.)

Whatever the answer, in August 1942, perhaps belatedly, the male staff of the 2/9th Australian General Hospital (AGH) transferred to Papua from Australia after service in Egypt and Palestine. By the end of the month the 2/9th AGH was established at Bootless Bay, 17 miles (27.2 kilometres) south-east of Port Moresby. Because of the threat posed by the continuing Japanese thrust down the Kokoda Track, the female staff were not permitted to join their male colleagues at Bootless Bay until late October.

Known as 'the 17 Mile' because of its location, the 2/9th AGH arrived in Papua none too soon. Its purpose was to receive all casualties from forward areas for treatment before their repatriation to Australia. At this stage of the fighting in Papua, during the second half of August 1942, Australian forces were being pushed back along the Kokoda Track from Isurava to Eora. The retreat continued until they reached Imita Ridge on 17 September.

The 2/9th AGH was a 1,200-bed facility but at times held up to 2,000 patients, the overflow being accommodated on stretchers. Although casualties flooded in from the fighting along the Kokoda Track, the patients admitted for non-combat-related reasons generally outnumbered war casualties by a ratio of about ten to one. These

'medical' cases mostly comprised patients suffering tropical diseases, mainly malaria, but also dengue fever, scrub typhus, tropical ulcers and dysentery.

Figure 4: The 2/9th Australian General Hospital at Bootless Bay, 27 kilometres south-east of Port Moresby, September 1942. (Source: Australian War Memorial photograph 026604A.)

In January 1943 a second hospital, the 2/5th AGH was brought to Port Moresby as well, joining the 2/9th AGH at Bootless Bay. It, too, had a 1,200-bed capacity. Although it arrived too late for the Owen Stanley and Milne Bay campaigns, it provided relief for the overtaxed 2/9th AGH during the subsequent battles along the north Papuan coast.

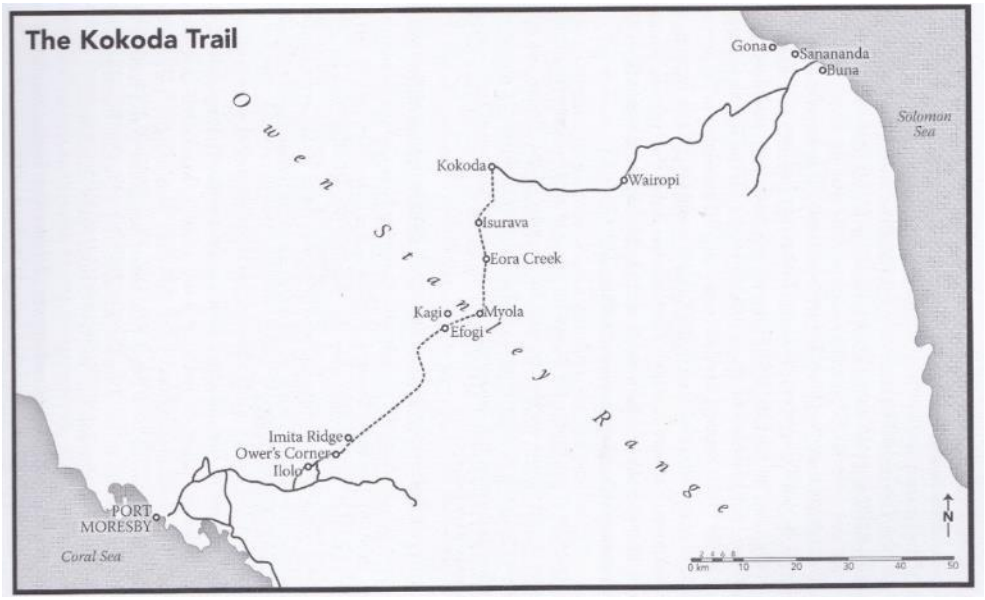
3. The Owen Stanley campaign

a) The campaign

When the Japanese established their Buna–Gona beachheads and began advancing towards Kokoda in July 1942, no adequate arrangements existed for handling casualties in northern Papua and along the Kokoda Track. The struggles between the Australians and Japanese along the track are remembered as the Owen Stanley campaign. The map in Figure 2 below indicates the location of Kokoda, the Kokoda Track and the Owen Stanley Range in relation to Port Moresby and the Papuan Beachheads.

The campaign lasted for 14 weeks. It effectively began when Japanese forces attacked untried Australian units at Kokoda, 70 kilometres inland from Gona and Buna, on 28 July. Opposing the Japanese was Maroubra Force, comprising mainly the 39th Battalion, a militia unit from Melbourne, and the Papuan Infantry Battalion. The 7th Division, recently returned from the Middle East, subsequently joined this force. The campaign ended on 2 November when the Australians reoccupied Kokoda. The Australians' continued fighting advance towards the coast through Oivi, Gorari and Wairopi properly belongs to the 'Beachheads' campaign and the battles for Gona, Buna and Sanananda.

Figure 5: The Owen Stanley campaign and the Kokoda Track



Source: Ian Howie-Willis, *A Medical Emergency: Major-General 'Ginger' Burston and the Army Medical Service in World War II* (Big Sky Publishing, Sydney, 2012), p. 249.

Climate and terrain ensured that the fighting in the Owen Stanleys was among the most difficult and costly for Australian troops in any campaign in any theatre during the war. The absence of roads and airstrips to facilitate the movement of supplies and personnel, meant that the soldiers walked wherever they had to go.

The troops relied heavily on a labour force of some 3,000 Papuan carriers recruited from the villages near the track by the Australian New Guinea Administrative Unit (ANGAU). The carriers brought forward supplies and ammunition in 18-kilogram (40-pound) packs, and stretchered out the wounded. These village men were the so-called 'Fuzzy-Wuzzy Angels' of later legend.

b) <u>The medical support</u>

A recent medical-military historian of the Owen Stanley campaign, Dr Jan McLeod, argues that both the Army and the AMS were remiss in the inadequate medical arrangements made for the war in Papua generally and for the Owen Stanley campaign in particular. She argues that throughout the campaigns in Papua, 'the medical response remained reactive, rather than proactive'.[3] The main title of her 2019 book, *Shadows on the Track*, hints at the deficient planning by the AMS, especially during the Owen Stanley campaign. In considering 'the enormity of the difficulties encountered by the Australian field ambulance units' during the earlier weeks of the campaign, Dr McLeod observes that:

> the cumulative effect of the lack of priority afforded the medical units, the acute shortage of suitably trained personnel, inadequate planning, insufficient medical equipment, and indiscipline among the soldiers [of some AMS units] exacted an unnecessarily heavy toll…. The initial medical situation in Papua did not bode well for unit personnel or their patients in the months to come. Medical planning at even the most basic level — the logistics of

[3] McLeod, Jan, personal communication, 14 August 2021.

> transporting medical equipment across the mountains and the provision of adequate nutrition for patients — was overlooked right up until the moment when it could be ignored no longer. One result of such failures was that medical officers on the ground were increasingly forced to rely on improvised solutions and make decisions in a reactive rather than proactive fashion…. A small band of medical personnel was left to cope with illness and wounds, and to deal with issues of logistics and discipline along the Kokoda Track.[4]

Dr McLeod is especially critical of the role of the recently appointed DGMS, Major General S. Roy Burston, 'the ultimate leader [with] ultimate responsibility'. She has argued that 'it was Burston's core responsibility as DGMS to identify and overcome logistical challenges'.[5]

While Dr McLeod is correct, I think she has been 'wise after the event'. She has also been overly hard on the AMS and on Burston. Certain factors combined to hamper AMS effort. They included these: (a) high-level staffing problems within the AMS, including disruptive infighting over the position, as evidenced by three incumbents holding the position of DGMS in the space of little more than a year; (b) the rapidity of the Japanese advance into New Guinea and then Papua; (c) the recent return of the AIF from two years' service in the Middle East; (d) General Blamey's wholesale reorganisation of the entire Army in April 1942; and (e) the Allies' inability to predict that there would be an Owen Stanley campaign until July 1942. Under these circumstances, the AMS could hardly have planned for the campaign in advance, especially one fought in a region of formidable terrain and climate, without vehicular roads and reliable airfields.

Figure 6: Two medical officers of the 2/4th Field Ambulance, Captain Douglas R. Leslie (left) and Major Hew F.G. McDonald performing an operation on an injured soldier upon a makeshift operating table at Myola, Kokoda Track, October 1942. Major McDonald was killed a month

[4] McLeod, Jan, *Shadows on the Track* (2019), pp. 106–107.
[5] *Ibid*., p. 312.

later during a Japanese air attack on the main dressing station of the 2/4th at Soputa. (Source: Australian War Memorial photograph P02423.012.)

The medical needs of the campaign were initially met by Captain Geoffrey H. Vernon MC, previously a medical officer with the pre-war Papuan civil administration who had enlisted in ANGAU in February 1942. (ANGAU was the Army formation responsible for civilian administration in Papua and New Guinea.) 'Doc' Vernon had a distinguished Army service record from World War I, when he had been the Regimental Medical Officer of the 11th Australian Light Horse Regiment in the desert campaigns in the Middle East 1916–1918. As an ANGAU medical officer, Vernon's chief responsibility was the health of the Papuan carriers, but in the absence of a Regimental Medical Officer (RMO) attached to the 39th Battalion, he filled that role as well. He set up a Regimental Aid Post (RAP) at Kokoda, where his first patient after the Japanese began their assault was Lieutenant Colonel William Owen, the 39th Battalion commanding officer, who had been shot and mortally wounded.

Meanwhile Lieutenant Colonel Brennan, ADMS to New Guinea Force, sent two RMOs of the 39th Battalion forward with small parties of troops from the 14th Field Ambulance to establish RAPs at Kagi, 28 kilometres up the track from Owers Corner. At the same time, an AMS post was established at Ilolo, six kilometres on the Port Moresby side of Owers Corner, so that casualties being carried down the track could receive treatment before being moved by ambulance van to the 2/9th Australian General Hospital, then being established at Bootless Bay.

Figure 7: Congestion along the Kokoda Track: a Damien Parer photograph of soldiers and carriers converging on a rest station at Eora, 1 September 1942 (Source: Australian War Memorial photograph 013260.)

Over the next two or three weeks, RAPs and medical staging posts were established along the track. One of the main disadvantages of evacuating the wounded by stretcher was the narrowness of the track. Rarely more than a couple of metres wide, it became congested as stretcher-bearers carrying patients south passed carriers and reinforcements trudging north. When many casualties were being evacuated, the

parties of bearers often caught up with those ahead, causing banking up of patients at the next staging post or RAP. That placed pressure on the AMS staff manning the posts.

Stretcher-bearing, according to Walker, was 'the hardest work allotted to the natives'. It was also very labour-intensive because 'at least eight bearers were needed for each stretcher case; no less number could carry a sick or wounded man over the track in safety or comfort'.

Figure 8: A Damien Parer photograph of Papua stretcher-bearers — the 'Fuzzy Wuzzy Angels' — carrying a wounded Australian soldier up a steep, muddy slope near Eora Creek on the Kokoda Track, August 1942. (Australian War Memorial photograph no. 013286.)

Colonel F. Kingsley Norris, the 7th Division ADMS, later wrote that the 'Fuzzy-Wuzzy Angels carried stretchers over seemingly impassable barriers, with the patient reasonably comfortable'. The care they gave their patients was 'magnificent'.[6] Norris's account added to the legend of the Fuzzy-Wuzzy Angels, but on the track some proved less than angelic. Desertion from the carrier lines was a continual problem, with the wounded sometimes abandoned beside the track, the bearers having vanished into the jungle.

To ease the strain on the carriers, AMS staff required the walking wounded to make their own way back along the track. Norris commented on their stoic courage in a dispatch to Major General S. Roy ('Ginger') Burston, Downes's successor as DGMS. 'Their fortitude is wonderful,' he wrote; 'any that that can possibly struggle along are evacuated down the track from each stage at dawn, setting off on their lame and halting way without a protest [to] the next stage.'[7]

This was putting a very positive spin on a dire situation. What Norris did not tell Burston, at least in his written report, was that the medical officers euthanased some

[6] Norris, F. Kingsley, *No Memory For Pain: An Autobiography* (1970), p.21.

[7] 'ADMS visits to Maroubra Force: Reports on medical situation—care and evacuation of sick and wounded, Ioribaiwa area', AWM 54, item 481/1/25, entry for 8 September 1942.

of their more hopeless cases — those in which mortally wounded soldiers had little chance of surviving in the RAP to which they had been brought, let alone undergoing the ordeal of being stretchered to the next RAP. In other cases they were simply given pain-killers, set aside and allowed to die.[8]

Figure 9: A failed attempt at aerial evacuation of the wounded: soldiers gather round a Stinson aircraft which had crashed while landing on the boggy Myola airstrip, 22 October 1942. In the left background is a Ford tri-motor plane which had flipped over while attempting to land earlier that day. (Australian War Memorial photograph no. P02423.014.)

To reduce the rigours and slowness of stretcher-bearing, the AMS experimented with using light planes, Fords and single-engine Stinsons, as aerial ambulances to evacuate wounded from the one small airstrip between Kokoda and Owers Corner. This was at Myola, where 2/4th and 2/6th Field Ambulances maintained dressing stations. The experiment was unsuccessful. The planes could carry only three patients, while heavy cloud cover usually prevented them from landing. Further, the boggy ground at Myola caused several planes landing there to crash.

There was more success with the so-called 'biscuit bombers' — the planes used for dropping medical supplies, ammunition and rations over the Australian positions, even if only about half the material dropped could be recovered. After the recapture of Kokoda on 2 November, the larger airstrip there could be used to bring reinforcements and supplies forward, and to evacuate the wounded. But that was after the campaign had ended.

As the Japanese forced the Australians back towards Imita Ridge, the distances casualties had to be carried shortened; however, the number of casualties being carried to the main dressing station (MDS) at Ilolo increased. After the 2/6th Field Ambulance took responsibility for the station in early September 1942, the bed space was expanded to accommodate 100 patients. During the first three weeks of September, 1,200 patients passed through. Those who reached Ilolo had a good chance of surviving. In one period only four died out of 750 patients received at the station.

[8] McLeod, Jan, *Shadows on the Track* (2019), pp. 116–118.

The types of casualties varied. Gunshot wounds were the most common injuries, but some troops suffered shrapnel wounds from mortar and shellfire. The RMOs and surgeons at the dressing stations found that the small-calibre, high-velocity Japanese bullets did not inflict as much structural damage as higher calibre ammunition might have done. Head wounds were comparatively uncommon, perhaps because soldiers shot in the head were usually killed.

Medical officers found that gunshot wounds to the limbs were readily treatable, though fractured femurs were more problematic. Sucking chest wounds were also difficult to treat, but the worst cases were abdominal injuries. These had the lowest chance of surviving evacuation down the track. For all injured troops, walking wounded and stretcher cases alike, the trip back to Ilolo was an ordeal. To ease the suffering of the stretcher patients, morphine was administered to them for the first two days of the trip.

The incidence of disease was also high. Respiratory illnesses became common in the wet and cold higher sections of the track. In the lower sections malaria was a major cause of wastage. The anti-malarial routines put in place by the AMS staff were possible only in the area to the rear of Owers Corner. The diet of bully-beef, hard biscuits and black tea was another concern for the medical staff. It had bulk, but it was hardly nutritious. As the campaign continued, medical staff became alarmed as they realised many of the patients they were treating were also showing signs of malnutrition.

The most serious illness along the Track was dysentery. Poor hygiene practices and a lack of potable water — ironic, given the high daily rainfall — soon led to an epidemic. Diarrhoea was endemic among troops and carriers alike; dysentery further debilitated already malnourished and sick or injured troops. At the peak of the epidemic, medical staff treated between 50 and 80 cases of dysentery a day. To control it, they insisted on the unpopular measure of adding chlorine tablets to all drinking water; deep trench latrines were dug at intervals along the track; the swarms of disease-carrying flies were controlled with fly-spray and fly traps; wherever possible, human waste was incinerated; and daily sulphaguanidine doses were introduced for all troops.

The Owen Stanley campaign was costly for both sides. By the time it ended in mid-November 1942, the Australians had lost 625 killed, 1,055 wounded, and an estimated 4,200 troops sick with tropical diseases. These casualties amounted to 20 per cent of the 30,000 troops who took part in the campaign.

Japanese losses were very high. One estimate is that of the 13,500 Japanese who took part in the campaign, 2,050 men were killed and 4,500 were wounded or incapacitated with sickness; i.e. total casualties of 6,550 or 49 per cent of strength.

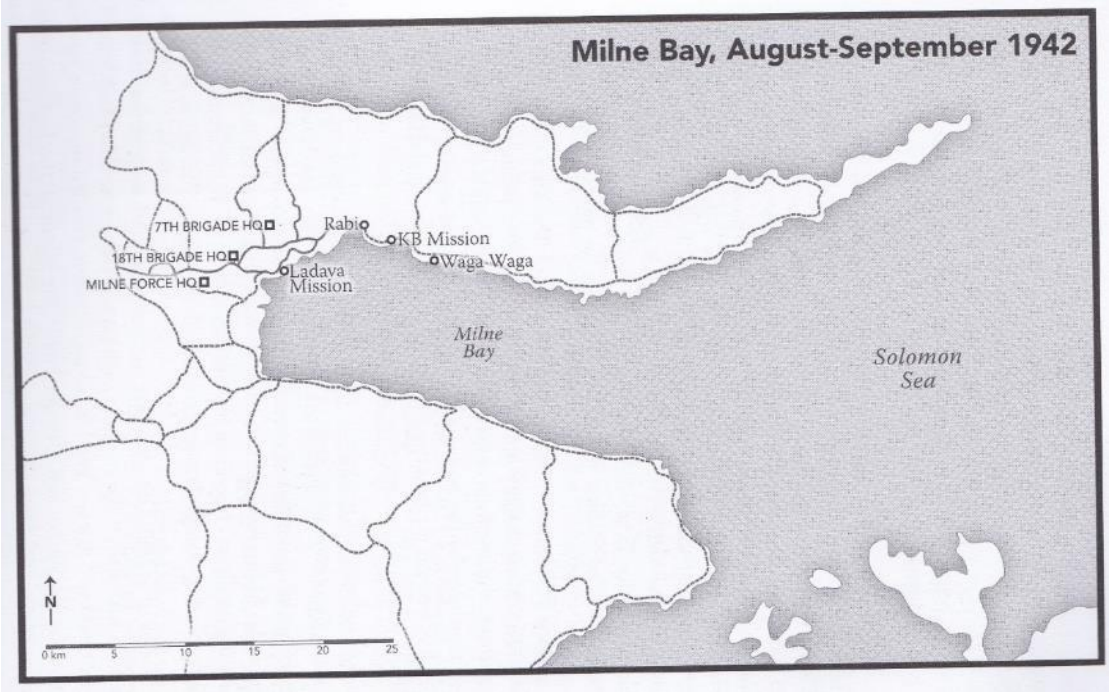
4. The battle for Milne Bay

a) <u>The campaign</u>

While the fighting along the Kokoda Track was continuing, Allied troops secured an important victory further east in Papua. This was at Milne Bay, at the eastern end of the Papuan peninsula, in late August–early September 1942. Before the battle, in June and July, US and Australian forces in Papua established a base at Milne Bay to protect their right flank. The Milne Bay campaign lasted only a fortnight, from 25 August to 7 September 1942, whereas the battle for the Kokoda Track took seven times as long.

The battle was fought between an Allied formation called Milne Force and a Japanese formation consisting of the 3rd Kure, 5th Kure, 5th Sasebo and 5th Yokosuka Special Naval Landing Forces supported by the 18th Cruiser and 29th Destroyer naval units. Milne Force strength was 8,824; the enemy force totalled 1,943. Outnumbered by more than four to one, the Japanese might not have attempted a landing in Milne Bay if their intelligence had been better and had realised the odds they faced. The Milne Bay area at the south-eastern end of the Papuan Peninsula is shown in the map in Figure 3 below.

Figure 10: Milne Bay



Source: Ian Howie-Willis, *A Medical Emergency: Major-General 'Ginger' Burston and the Army Medical Service in World War II* (Big Sky Publishing, Sydney, 2012), p. 255.

Milne Force, commanded by Major General Cyril A. Clowes, was made up of Brigadier John Field's 7th Australian Infantry Brigade (9th, 25th and 61st Battalions), Brigadier George F. Wootten's 18th Infantry Brigade (2/9th, 2/10th and 2/12th Battalions), the 55th Battalion (14th Brigade), the 101st Anti-Tank Regiment, the 9th Battery of the 2/3rd Light Anti-Aircraft Regiment, the 2/5th Field Regiment, plus two US units: the 46th Engineers Battalion and the 101st Coast Artillery Battalion (Anti-Aircraft). Milne Force was supported by No. 75 and No. 76 Squadrons of the RAAF.

The battle began after coastwatchers reported the approach of a Japanese convoy on 24 August. The Japanese force began landing the next evening near Waga Waga, on the northern shore of the bay, 17 kilometres east of Milne Force headquarters at the western end of the bay. After establishing a base, the Japanese sent patrols to probe the disposition of the allied' units. Their plan was to secure the area, then use Milne Bay to launch a combined naval, air and land assault on Port Moresby.

The Japanese began pushing westward early on 26 August, and inflicted casualties on the Milne Force units they encountered. The Allied commanders, Generals MacArthur and Blamey, later criticised Major General Clowes for not having opposed the Japanese landings, and for responding slowly to their advance

west. Allied action nevertheless severely disrupted Japanese planning. RAAF air raids hindered attempts by Japanese ships to bring more troops and material to Milne Bay, limiting them to night-time activity. Guerrilla-style action by the widely dispersed allied units slowed Japanese attempts to advance. The weather, lack of maps, and ignorance of local conditions also hampered the Japanese. Heavy rains and mud prevented rapid forward movement, and Japanese light tanks bogged on the muddy tracks.

Figure 11: Australian soldiers and trucks in a muddy campsite at Milne Bay, 1942. (Australian War Memorial photograph no. 026682.)

Milne Force counter-attacked on 31 August. The Allies drove the invasion force back in hard fighting over the following days. Japanese air attacks and night-time shelling from ships offshore hindered the Allied counterattack, but the ships had actually arrived to evacuate the surviving Japanese troops. On 6 September the allies overran the Japanese base at Waga Waga, and by then had eliminated the few remaining isolated groups of enemy troops.

The achievement of Milne Force was more than the strategic advantage of denying the Japanese a base at the eastern end of the Papuan peninsula. Milne Force inflicted on Japanese ground troops their first defeat since the Pacific war began ten months earlier. It was a morale-boosting victory, demonstrating that the Japanese ground forces were not invincible. The enemy could be beaten on land, as well as at sea.

Allied casualties were moderate. Australian losses were 167 killed or missing and 206 wounded; the Americans lost 14 killed. Japanese losses were heavy, amounting to at least 936 — 625 killed and 311 wounded — or 48 per cent of the enemy force. The total Allied casualties, 287, were less than a third (31 per cent) those of the enemy. They amounted to 3.3 per cent of the 8,824 Allied personnel who took part.

b) The medical support

At Milne Bay, AMS support for the combat troops came initially from the 11th Field Ambulance, which received training in north Queensland before arriving in Papua. This unit was joined later by the 2/2nd and 2/5th Field Ambulances. Between them, these units set up 14 aid stations of different kinds. In the forward areas, in an arc closest to the Japanese base at Waga Waga, they established five posts, each staffed by a field ambulance company—two from the 2/2nd Field Ambulance, two from the 11th Field Ambulance, and one from the 2/5th Field Ambulance. Behind these posts an advanced dressing station (ADS) of the 11th Field Ambulance was placed near the beach at Ladava Mission; further to the rear were the 2/1st and 110th Casualty Clearing Stations (CCS), each CCS in effect being a tent hospital.

At the rear, near Milne Force headquarters, were two main dressing stations (MDS), one operated by the 11th Field Ambulance, the other by the 2/5th Field Ambulance. The 2/3rd Field Ambulance convalescent depot was located nearby. In addition, because of the malarial nature of the Milne Bay area, a malaria control unit (MCU) was attached to two of the field ambulance company posts, the 2/2nd MCU at a 2/2nd Field Ambulance post, and the 8th MCU at an 11th Field Ambulance post. The US troops also had their own 100-bed hospital. Casualties needing further treatment could be evacuated to Port Moresby by hospital ship from the three jetties, or by air from one of the three airstrips at the north-west end of the bay. In overall command of these facilities was the Milne Force ADMS, Colonel George B.G. Maitland.

The chief problems facing Colonel Maitland and his AMS units were the weather and malaria. Like much of Papua New Guinea, Milne Bay has a tropical wet climate. The Milne Bay campaign took place during an unusually wet 'wet' season of drenching rains. The sites occupied by AMS units were low-lying and flood-prone, which required digging drainage ditches to prevent them being continually awash.

Figure 12: The Bren gun carrier in which Captain Ronald G. Lyne, Regimental Medical Officer of the 2/10th Battalion, was riding when it slid off the track and ran over an Australian mine,

September 1942. Captain Lyne suffered fatal wounds. (Australian War Memorial photograph no. 026688.)

Transporting casualties to the medical stations was always difficult, because of the mud and slippery road surfaces. When ambulance vans became bogged, four-wheel drive trucks were used instead, or bearer parties from the field ambulances carried the wounded to the rear on stretchers. On 1 September 1942 torrential rains caused floods that cut off both MDSs from the advanced medical posts by washing away the bridges. Until the floods receded, casualties had to be moved to the dressing stations by sea aboard small boats.

Among the early casualties after the Japanese began advancing on 26 August were the RMO of the 2/10th Battalion, Captain Ronald G. Lyne, and two AMS orderlies, who were badly injured when their vehicle ran off the road and struck a mine. Lyne died later in the 110th CCS.

Enemy naval and air action also hampered the efforts of AMS units. On the night of 6 September 1942 a Japanese cruiser shelled and sank an Australian cargo vessel, the *Anshun*, unloading supplies near a 2/5th Field Ambulance medical post. At the time the Australian hospital ship *Manunda* was waiting offshore to unload stores for the 2/1st CCS. The *Manunda* could not dock because the sunken *Anshun* blocked the approach. Barges laboriously transferred *Manunda's* cargo ashore, while lifeboats ferried groups of wounded and sick soldiers awaiting evacuation to *Manunda*. After 182 patients had been hoisted aboard, enemy aircraft arrived and began bombing the harbour area. When one bomb fell nearby, the *Manunda* put to sea and returned to Port Moresby without unloading the rest of the cargo, or taking aboard the 347 patients still to be evacuated.

Figure 13: The 2/1st Australian Hospital Ship *Manunda*. The Japanese bombed the *Manunda* in Darwin in February 1942 but left it alone in Milne Bay the following September. The ship is seen here anchored off Lae in 1944. (Australian War Memorial photograph no. 075199.)

The high rainfall and swampy terrain along the coast also rendered the region highly malarial. This was known in advance by the commander of the 110th CCS, Lieutenant-Colonel Frederick L. Wall, who ensured that his unit left Brisbane for

Milne Bay well prepared to tackle the expected high incidence of malaria. He took a fully equipped pathological laboratory, a pathologist, and items of anti-malaria equipment, including fly-screen netting, anti-mosquito ointment, and knapsack sprays. With the assistance of the Army's consultant physician, Brigadier Neil Hamilton Fairley, he also took 200,000 quinine tablets.

Figure 14: Malaria control measures at Milne Bay: a gang of Papuan labourers employed by an Army Malaria Control Unit digging a drainage ditch, 1943. (Australian War Memorial photograph no. 059472.)

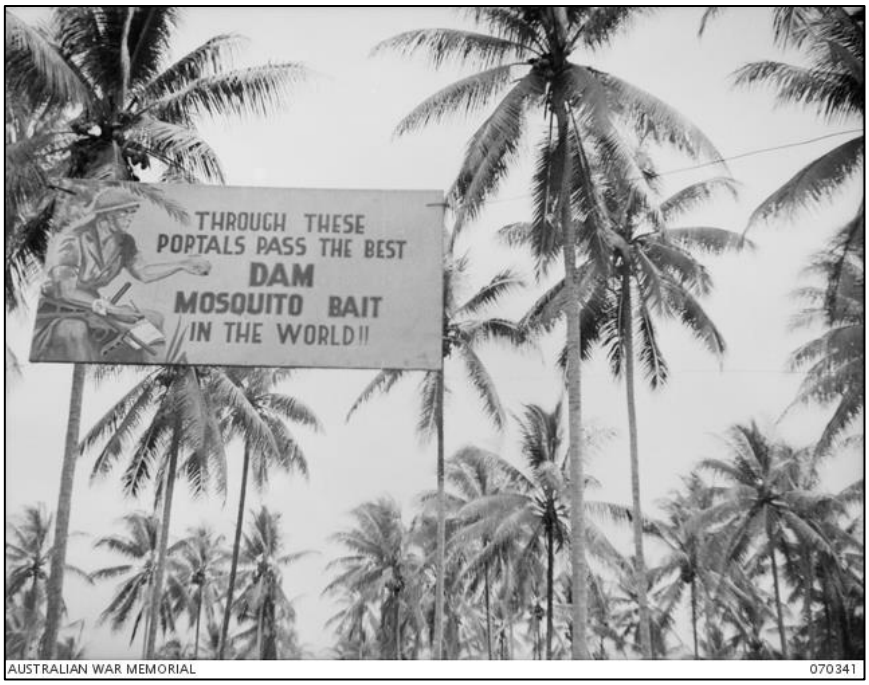


Figure 15: The continuing anti-Malaria propaganda campaign at Milne Bay: one of various signs erected to alert troops to the dangers of malaria and encourage them to observe 'malaria discipline', 1944. (Australian War Memorial photograph no. 070341.)

Despite these precautions, malaria became the other enemy of the troops at Milne Bay, during the battle and afterwards. As the fighting ended, malaria cases soon replaced battle casualties, with up to 200 beds at the 110th CCS occupied by troops suffering malaria. This led to the formation of special malaria squads, the members of which were trained in malaria control procedures by the 8th MCU.

Among the control measures adopted to reduce infection were pouring sump oil on semi-permanent pools of water where mosquitoes were breeding, filling wheel ruts where water collected, spraying slit-trenches and tents with insecticide daily, and insisting that AMS guidelines on personal protection be observed. These included strict observation of AMS instructions for taking anti-malarial drugs (quinine, atebrine and plasmoquine), sleeping under mosquito nets, wearing long slacks and gaiters, and rolling down shirt sleeves.

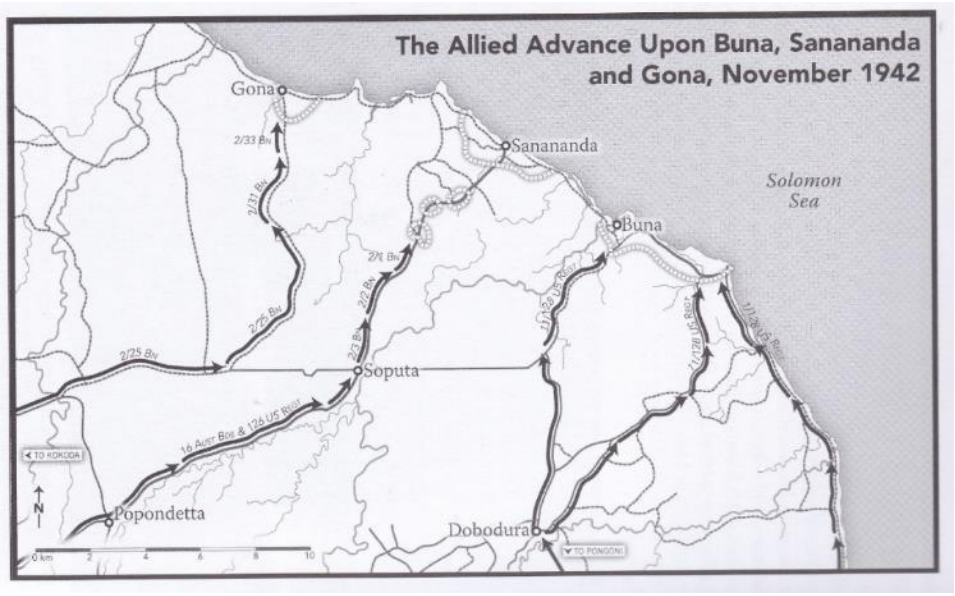
The battle against malaria continued for the rest of the war. A later section of this paper summarises the impact of the disease during the campaigns in Papua.

5. The Northern Beaches campaign — Gona–Buna–Sanananda

a) <u>The campaign</u>

The allied campaign to drive the Japanese from the north coast of Papua followed the Japanese defeat at Milne Bay and their later retreat from Kokoda. The Supreme Allied Commander in the SWPA, General MacArthur, planned for an allied approach to the Buna–Sanananda–Gona area along three corridors. The Australian 16th and 25th Brigades advanced from Kokoda to Sanananda and Gona; the 128th US Infantry Regiment moved to Buna through Dobodura, 13 kilometres south of Buna; and the 126th US Infantry Regiment and Australian 2/10th Battalion (flown in from Milne Bay) were shipped to Pongani, 32 kilometres south of Buna.

Figure 16: Gona, Buna & Sanananda



Source: Ian Howie-Willis, *A Medical Emergency: Major-General 'Ginger' Burston and the Army Medical Service in World War II* (Big Sky Publishing, Sydney, 2012), p. 260.

The Australians were commanded by Lieutenant General Edmund F. Herring, and the Americans by Major-General Edwin F. Harding. They had their headquarters at Popondetta, 18 kilometres south-west of Buna. The map in Figure 4 below shows the Allies' lines of advance towards Gona, Buna and Sanananda and the Japanese defensive perimeters.

The advance began on 16 November 1942, a fortnight after the recapture of Kokoda. Progress was slow at first, because of the numerous river crossings, the swampy terrain, and fierce Japanese resistance. The allies suffered heavy losses but gained little ground. By early December the campaign had almost reached a stalemate. Reinforcements helped the allies regain their momentum. Gona fell first, on 10 December. By 18 December the Australians had also cleared the Japanese from positions west of Gona.

Figure 17: Australian soldiers and Papuan carriers negotiating a track through a swamp between Buna and Sanananda. (Australian War Memorial photograph no. 014173).

On 2 January 1943 the 2/10th Battalion and 128th US Regiment took Buna and cleared the remaining Japanese troops from the area the day after that. Meanwhile, the Australian 16th Brigade continued its advance towards Sanananda from Soputa, 10 kilometres to the south-west. The Japanese positions at Sanananda were taken on 22 January. By then most surviving Japanese troops had been evacuated by sea and shipped to Salamaua and Lae.

The Allied advance from Kokoda towards the north Papuan coast was a novel situation for the troops. Instead of resisting an enemy force advancing against them, they were forcing the enemy back into well-fortified strongholds. As elsewhere in the Pacific War, the Japanese were consummate masters of the art of constructing well-concealed and near-impregnable bunkers, which they defended fiercely.

The campaign on the north Papuan coast was expensive for both the Allies and the Japanese. Allied casualties amounted to about 7,000. The Australians lost 1,261 killed or died from wounds or other causes, and 2,209 wounded, while the Americans lost about 730 killed and 2,800 wounded. The battles for Buna–Sanananda–Gona were the costliest battles yet fought by Australian troops during World War II. Allied

combat losses amounted to 35 percent of combined Australian-US strength of 20,000 men.

Figure 18: An iconic photograph by the photojournalist, George Silk: Raphael Oimbari, a Papuan man, guides Private George ('Dick') Whittington to the main dressing station at Dobodura, 25 December 1942. Whittington, who had been wounded in the battle for Buna, recovered from his injuries but subsequently died of scrub typhus & dysentery in February 1943. (Australian War Memorial photograph no. 014028.)

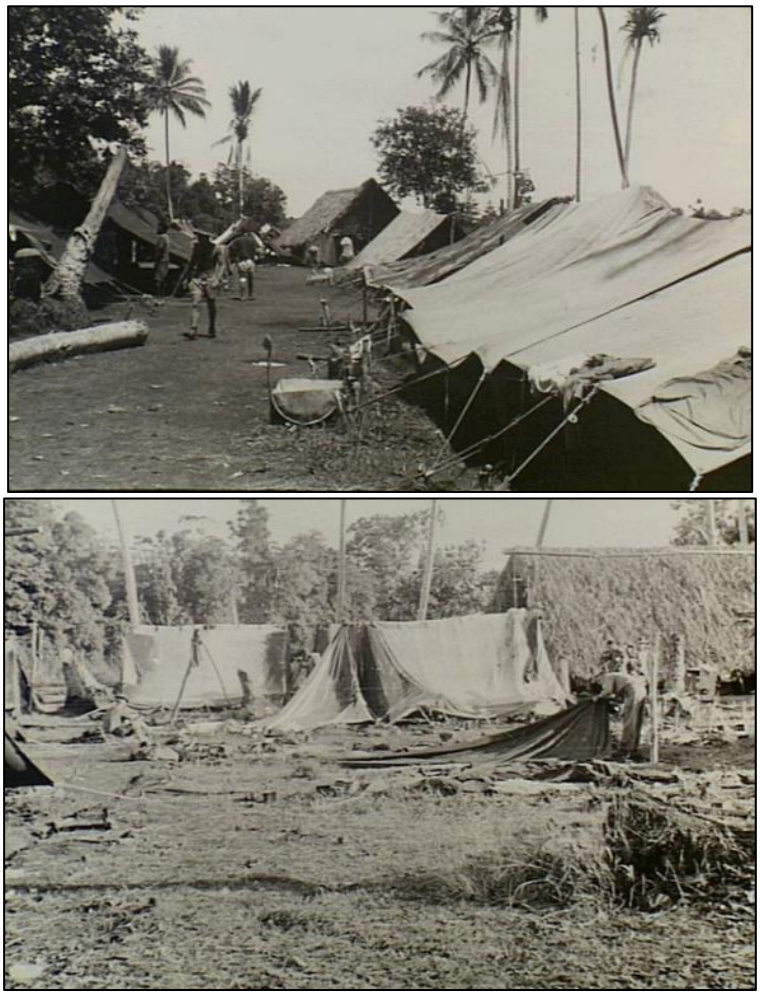
Figure 19: Captain Colin R. Copland (left), a medical officer of the 14th Field Ambulance, dressing the wound of a soldier who had ben shot in the arm only three minutes earlier at Sanananda. (Australian War Memorial photograph no. 014246.)

The numbers of troops removed at least temporarily from the fighting by disease were also very high. Walker's official medical history demonstrated that losses from diseases exceeded combat casualties by a factor of 5.7. Malaria alone accounted for three-quarters of the 37,360 cases of disease.

The Japanese casualties were appreciably higher than those of the allies, both absolutely and relatively. They lost an estimated 4,000 killed, 3,000 died from disease, 1,200 evacuated wounded, and 250 captured, i.e. total losses of 8,450. This was 70 per cent of their force, which totalled some 12,000 men.

b) <u>The medical support</u>

During the Beachheads campaign the Allied medical units had to contend with new hazards. As well as dense jungles and coconut plantations, they were operating in lowland swamps and drier expanses of kunai grass behind the coast. In addition to the ever-present malaria, dengue fever (a mosquito-borne viral disease) and scrub typhus (a fever transmitted by the bite of mites) became problems for the first time. On top of that was the high rate of battlefield casualties — as seen, 7,000 killed and wounded in the 10 weeks the campaign lasted.



Figures 20–21: The tent lines of the main dressing station of the 2/4th Field Ambulance at Sopta before and after the Japanese air raid on 27 November 1942. In the second

photograph, soldiers are sifting through the wreckage caused by the raid. (Australian War Memorial photograph nos. P02423.037 [above] & P02423.048 [below].)

As soon as 7th Division headquarters moved to Soputa, the 14th Field Ambulance established a MDS there, and an ADS each at Jumbora to the west and Popondetta to the south. Airstrips constructed at Popondetta, and to the east at Dobodura, enabled patients to be evacuated by air. The numbers of sick troops suffering fevers quickly multiplied at the medical stations. Attacks on Japanese positions produced numerous battle casualties, who were either carried in by teams of Papuan stretcher-bearers or arrived as walking wounded.

Catastrophe struck the allied medical effort on 27 November, when Japanese aircraft bombed and strafed the 2/4th Field Ambulance MDS, despite clearly displayed Red Cross markings. When attacked, the MDS was holding 200 patients. The air raid killed 22 men and injured another 50. Among the dead were two medical officers, Majors Ian F. Vickery and Hew F.G. McDonald, and five AMS orderlies. Their deaths 'caused a wave of gloom' to sweep across AMS personnel in Papua, the DDMS, Brigadier William W.S. Johnston, wrote to the DGMS, Burston.[9] After the raid the MDS was hurriedly re-sited in dense jungle 400 metres behind the original open position.

After the recapture of Gona on 10 December, the focus of the medical effort shifted to Buna. RMOs were placed in forward positions on the approaches to both Buna and Sanananda. As Papuan bearers were unwilling to move into exposed positions near the front, for the first time since the beginning of the retreat into the Owen Stanleys, the RMOs had to use soldiers as stretcher-bearers.

Figure 22: Papuan stretcher bearers place a wounded Australian soldier on a jeep for transport to a dressing station, Sanananda, January 1943. (Australian War Memorial photograph no. 014180.)

As fierce fighting for Buna and Sanananda continued, the AMS units had advantages not enjoyed by those that supported the campaign in the Owen Stanleys.

[9] Johnston, W.W.S. to Burston, S.R., 2 December 1942, in Australian War Memorial file 'Personal letters to DGMS 27 December 1939–12 May 1943', series AWM292, item Med 40/76.

Patients could be transported by jeep to the dressing stations in the rear. The airfields at Popondetta and Dobodura enabled C-47 Dakota transport aircraft to evacuate patients quickly, reliably, and in large numbers. On their return flights, the Dakotas brought in all the supplies and equipment needed. Once the allies broke through to the coast near Buna, they could evacuate casualties by sea. The casualties, moreover, had only a short distance to travel to medical stations.

Figure 23: Australian troops lifting a wounded soldier from a C47 Dakota transport aircraft, Port Moresby, January 1943. The plane had just brought in casualties from the fighting at Sanananda. (Australian War Memorial photograph no. 014045.)

American casualties were sent to a collecting station at the southern end of the old Buna airstrip, and from there to the 18th, 22nd and 23rd US Portable Hospitals along the Buna-Dobodura road. Australian casualties handled at the RAPs of the 2/9th, 2/10th and 2/12th Battalions could be easily transported by jeep and Bren-gun carrier to the 2/5th Field Ambulance ADS at the northern end of the airstrip. From there they were sent a further ten kilometres along the Dobodura road to the 2/10th Field Ambulance MDS. Although the Australian and American medical units operated independently of each other at Buna, and later Sanananda, a high degree of comradely co-operation existed between them. Where convenient, they treated each other's patients.

The final battle for Sanananda, which began on 12 January 1943, required different arrangements from those made for the battle for Buna. The Japanese were entrenched in four separate strongholds along a five-kilometre line running from the coast south along the Sanananda Track. Eleven Australian RAPs were stationed around the Japanese perimeters along this line. Two ADSs of the 2/5th Field Ambulance were placed on nearby tracks, one near Sananada Point, the other three kilometres to the south-west. The 7th US Portable Hospital was placed another two kilometres further south on the Sanananda Track.

Figure 24: Private Alfred G. ('Scrap Iron') Arthur of the 2/5th Australian Field Ambulance helps a wounded soldier during the battle for Sanananda, January 1943. (Australian War Memorial photograph no. 014178.)

During the first few days of the battle, the medical effort was hampered by heavy rainfall on the coast and inland at Popondetta and Soputa. In the Sanananda area, the ground became so waterlogged and muddy that even jeeps had difficulty negotiating the tracks between the RAPs and the dressing stations. As water levels rose and the countryside became a vast swamp, teams of Papuan carriers were brought in to carry the wounded to the dressing stations.

The bad weather also prevented planes from using the airfield at Popondetta. The numbers of patients awaiting evacuation to Port Moresby consequently built up rapidly at the Soputa and Popondetta dressing stations. By 14 December, two days after the assault on Sanananda began, 615 patients were at Popondetta. The wait for the weather to clear was uncomfortable because heavy rains flooded some of the wards, and food and blankets were in short supply. Fortunately the rain stopped that day, allowing 436 patients to be evacuated. Patients continued arriving at Popondetta in large numbers until the end of the campaign. On the last day of fighting at Sanananda, 22 January, 500 patients were airlifted from Popondetta to Port Moresby.

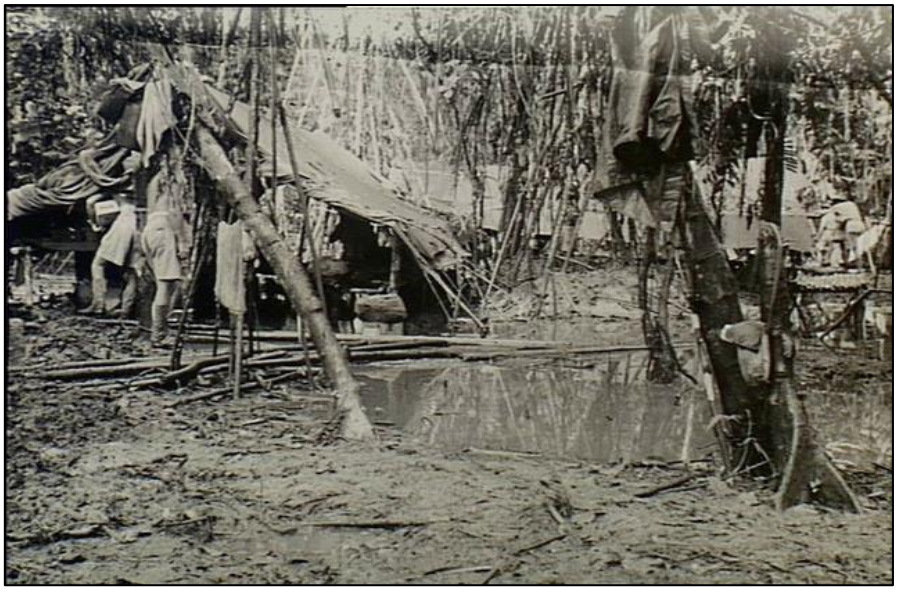


Figure 25: Flooding of the main dressing station of the 2/4th Field Ambulance by monsoonal rains, Soputa, December 1942. (Australian War Memorial photograph no. P0243.055.)

Figure 26: An Australian soldier watching a Papuan labourer digging a ditch to drain the flooded main dressing station of the 2/4th Field Ambulance, Soputa, December 1942. (Australian War Memorial photograph no. P0243.057.)

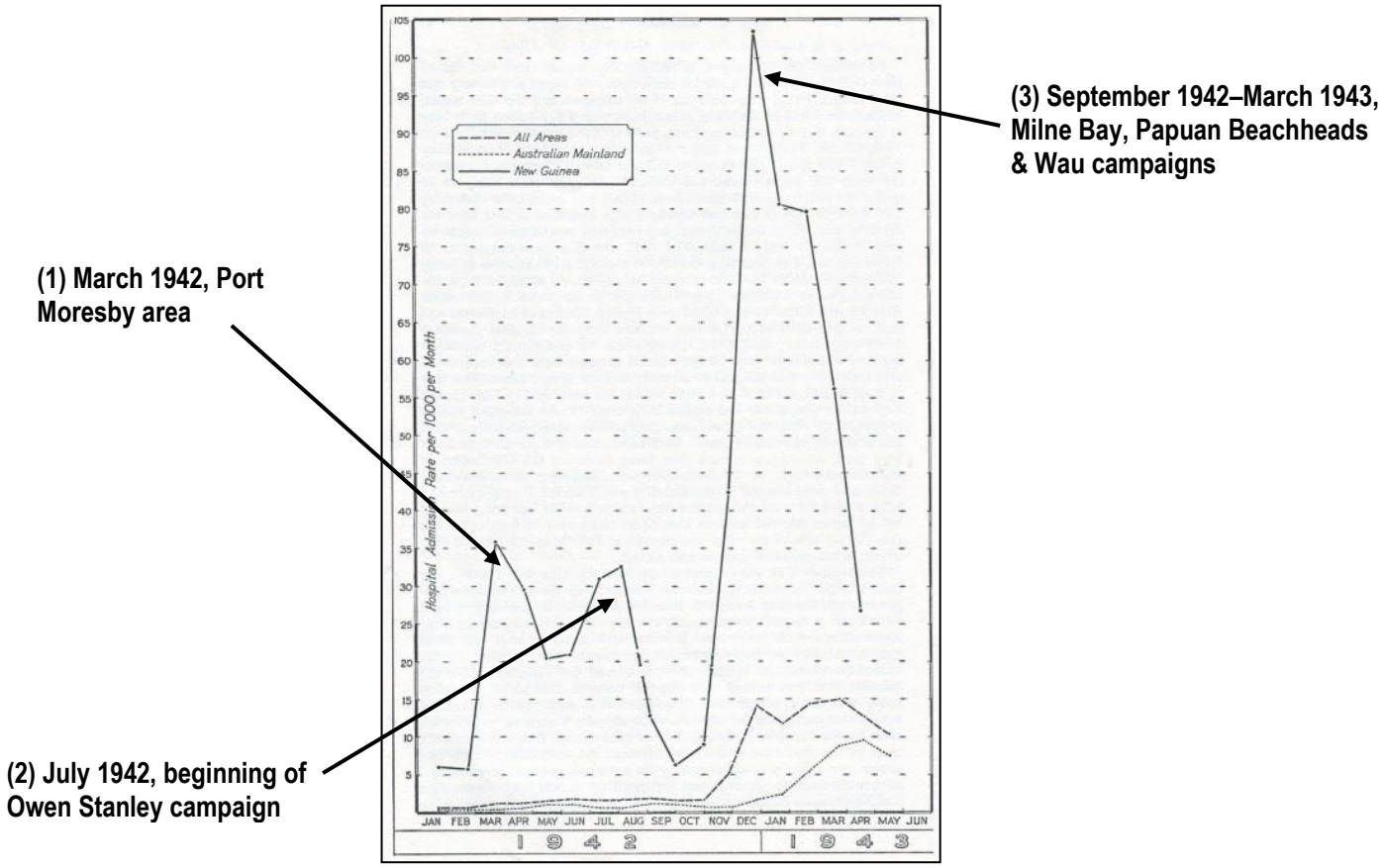
6. 'Swamped with malaria'

During the Papuan campaigns malaria was as much the enemy of both the Allies and the Japanese as either side was for the other

The Australian Army in Papua suffered its first malaria epidemic during March–April 1942 as it started building up troop numbers in the Port Moresby area. A second epidemic followed in July as troops moved along the Kokoda Track at the beginning of the Owen Stanley campaign. A third and more serious epidemic occurred between

September 1942 and March 1943, during and after the fighting at Milne Bay, along the north Papuan beachheads and the defence of Wau in the Territory of New Guinea.

Figure 27: The rising tide of malaria in Papua and New Guinea in 1942–43 — three serious epidemics of the disease



Dr Allan S. Walker's graph of hospital admissions for malaria per thousand of Army personnel per month, from his official medical history of World War II. As the graph shows, three successive epidemics of the disease occurred among Australian troops in Papua and New Guinea during 1942–43:

1) in March–April 1942, as troop numbers at Port Moresby were increasing rapidly in response to the Japanese invasion of New Guinea;
2) during July 1942, as troops began fighting and the Owen Stanley campaign;
3) from September 1942 until March 1943, during and after the fighting at Milne Bay, the Papuan northern beachheads and at Wau.

(Source: Walker, Allan S., *Clinical Problems of War* [Australian War Memorial, Canberra, 1952], p. 82.)

The graph from Walker's official history, *The Island Campaigns*, reproduced in Figure 5 above, shows the course of these epidemics. During the first epidemic, the rate of hospitalisation for malaria rose from six cases per thousand troops per month at the end of February 1942 to 36 per thousand at the end of March. In late May and early June the infection rate climbed again to spike at 33 per thousand by the end of July. By that stage at least 25,000 soldiers had suffered attacks of the disease.

Worse was to come, however, because from September 1942 the malaria hospitalisation rate in Papua New Guinea rose to a stupendous 103 per thousand

troops a month by the end of December. This third epidemic, of course, coincided with the battle for Milne Bay and the Beachheads campaign in the highly malarious, swampy, mosquito-ridden lowlands at Milne Bay and along the north Papua coast. In January 1943 infections during the continued fighting at Buna and Sananda and also in the defence of Wau contributed to this third epidemic.

By January 1943 the malaria hospitalisation rate of troops fighting the battles in Papua and New Guinea had quickly climbed to 48 admissions per thousand troops ***per week***. That was the monthly equivalent of 208 hospitalisations per thousand. This effectively meant that each soldier fighting in the Papua-New Guinea campaigns would experience an average of 2.5 malaria hospitalisations annually.

Within the third epidemic, the malarial infections at Milne Bay were an epidemic of their own. In the aftermath of the battle there, the infection rate climbed to an extraordinary 82 hospitalisations per thousand troops weekly by December 1942, equal to an enormous monthly rate of 355 cases per thousand men. At that rate, malaria would hospitalise ***all*** Milne Force troops every three weeks!

With monthly infection rates above 200 cases for thousand troops, the soldiers fighting in Papua-New Guinea were suffering ***major*** epidemics of malaria. With Milne Bay and Wau, the Beachheads campaigns produced one of the three worst malarial epidemics ever to overtake Australian soldiers. (The first was in Syria in 1918; the third was in Vietnam in 1968.)

Distressing though malaria was for those afflicted, deaths from the disease, invariably of the *falciparum* variety, were mercifully rare — mortality of only 0.03 per cent of troop strength, or three men out of every 10,000. The low mortality reflected prompt and effective treatment.

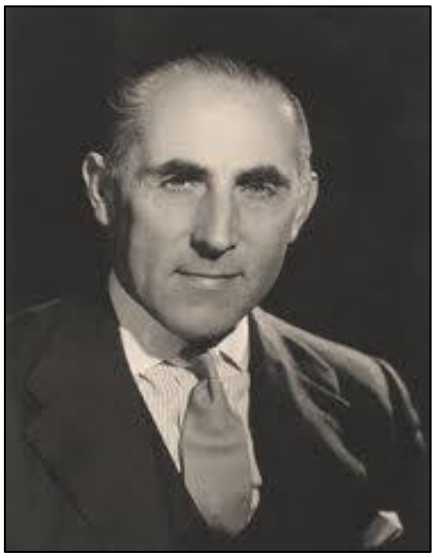


Figure 28: Lieutenant Colonel Sir Edward W.S. ('Ted') Ford in 1959. Ford convinced General Blamey that he must give the war against malaria the highest priority. (Source: National Portrait Gallery [London] photograph NPGx167171.)

The stratospherically high infection rates nevertheless had to be radically reduced, because, as the DDMS, Brigadier William W.S. Johnston, pointed out, New Guinea Force was being 'swamped with malaria'.[10]

[10] Burston, S.R. to Johnston, W.W.S., 9 December 1942, AWM file AWM292, item no. Med 40/70. 'Personal letters to DGMS, 27 December 1939–12 May 1943'.

In late 1942 Burston argued to General Blamey that his LHQ should be giving the highest priority to malaria policy in order 'to keep an efficient striking force in the field' in the SWPA. He suggested that the Army's two leading malariologists, Brigadier Neil Hamilton Fairley and Lieutenant-Colonel Edward W.S. Ford, be tasked with mounting a war against malaria. Fairley was the LHQ consultant on tropical diseases and Ford was Assistant Director of Pathology at New Guinea Force headquarters.

Burston arranged for Ford to brief Blamey on the malaria problem. Ford told Blamey frankly that he had watched in dismay while 'in a few months malaria had reduced a first rate fighting force to an ineffective fraction of its original strength'.[11]

Reputedly Blamey then asked Ford a rhetorical question: 'You're telling me, Lieutenant Colonel, that I must take malaria more seriously?'[12]

'No, General,' Ford replied bluntly and emphatically, 'I'm telling you that unless you give malaria the highest priority, very soon you won't have an army to be Commander-in-Chief of!'[13]

Figure 29: Brigadier Sir Neil Hamilton Fairley, the Australian Army's principal tropical diseases expert who designed the pioneering malariological research program of the Land Headquarters Medical Research Unit at Cairns 1943–1946. (Source: Australian War Memorial photograph 126353.)

The direct result of the Blamey–Ford discussion was that Blamey took personal responsibility for the campaign against malaria. With Blamey's support, Burston,

[11] Burston, S.R. to Blamey, T.A., 18 December 1942, in AWM file 3DRL/6643 (Papers of Field Marshal Sir Thomas Albert Blamey).

[12] Keogh, E.V. to Burston, S.R., 18 December 1942, in AWM file AWM52, 'Official War Diary of DGMS', November and December 1942. The conversation between Blamey and Ford is recorded in Hetherington, John, *Blamey: Controversial Soldier* (1973).

[13] Keogh, E.V. to Burston, S.R., 18 December 1942, *op. cit.*; and Hetherington, John, *Blamey: Controversial Soldier* (1973).

Fairley, Ford and other malariologists of the AMS established the LHQ Medical Research Unit (MRU) in Cairns in June 1943.

The pioneering research of the LHQMRU during the three years 1943–1946 is beyond the scope of this paper. Suffice to say that it enabled the Allies to reduce malarial infection rates to minimal levels.

Figure 30: A volunteer being bitten by malaria-loaded mosquitoes during the malariological during an experiment at the Land Headquarters Medical Research Unit at Cairns. (Source: Australian War Memorial photograph 119086.)

That in turn was a factor in the eventual Allied victory in Papua New Guinea because the Japanese never defeated malaria. Instead, they were conquered by both the Allies *and* malaria.

Figure 31: A Japanese medical officer examines a soldier suffering from malaria in the hospital of the POW compound on Muschu Island near Wewak, October 1945. (Source: Australian War Memorial photograph no. 098342.)

Disease claimed many thousands of enemy lives. The Japanese are thought to have lost about 13,000 troops who died from diseases during the Papuan campaigns of 1942–43. Malaria contributed greatly to this toll. Among the diseases commonly suffered by enemy troops in Papua were dysentery, beriberi, scrub typhus and dengue fever. Malaria, however, was the biggest killer of them all, often working in combination with these other diseases and exacerbated by malnutrition and exhaustion. The Japanese suffering was worsened by severe shortages of anti-malarial drugs. By November 1942, their 1st Field Hospital at Giruwa near Buna had run out of most drugs, including atebrine, quinine and plasmoquine, the main anti-malarials. With no means for fighting rampant disease, the Japanese were fated to lose the war for the Beachheads.

7. Conclusion

The Allied campaigns in Papua in 1942–1943 were hastily conceived and executed. Unlike the subsequent Allied offensives of 1943–1944 in New Guinea, little detailed planning was possible beforehand. That was because the campaigns were wholly reactive — Allied responses to enemy invasions of Australian territories, first on the Papuan coast and soon after at Milne Bay.

The lack of proactive planning soon became evident in the haphazard medical arrangements for treating and evacuating the casualties from the fighting along the Kokoda Track. The piecemeal measures put in place led to much suffering among the wounded. The walking wounded faced days of arduous, painful trekking over some of the most rugged, perilous terrain in any theatre of the war. Those who had to be stretchered back along the track underwent a distressing ordeal. Given the terrain, the climate, and the route the Japanese chose for their thrust towards Port Moresby, no alternative arrangements were possible, however. The Owen Stanleys were such that no amount of prescient planning could have alleviated conditions along the Kokoda Track.

Despite the continuing difficulties with terrain and climate, the situation improved in both the Milne Bay and northern Beachhead operations. In each place, road, air and sea evacuation of casualties became possible; and large dressing and casualty clearing stations could be established relatively close to the battlefront.

Meanwhile, the Army Medical Service had to deal with two of the three worst epidemics of malaria ever to strike the Australian Army. That, however, was ultimately a beneficial experience because it led to the highly productive malaria research program conducted by the Land Headquarters Medical Research Unit. The research by the LHQMRU helped the Allies defeat both malaria and the Japanese. The Japanese, by contrast, did not learn to control malaria and were accordingly conquered by malaria as well as the Allies.

Abbreviations

Abbreviation	Meaning
AAMC	Australian Army Medical Corps
AAMWS	Australian Army Medical Women's Service
AANS	[Australian] Army Nursing Service
ADMS	Assistant Director of Medical Services.
ADS	Advanced Dressing Station.
AGH	Australian General Hospital.
AIF	Australian Imperial Force.
AMS	Army Medical Service.
ANGAU	Australian New Guinea Administrative Unit.
CCS	Casualty Clearing Station.
DDMS	Deputy Director of Medical Services.
DGMS	Director General of Medical Services.
MCU	Malaria Control Unit.
MDS	Main Dressing Station.
RAAF	Royal Australian Air Force.
RAN	Royal Australian Navy.
RAP	Regimental Aid Post.
RMO	Regimental Medical Officer.
SWPA	South-West Pacific Area.
US	United States of America.

References

Anderson, Nicholas, *The Battle of Milne Bay 1942*, Sydney, Big Sky Publishing, 2018.

Australian War Memorial archival file, series AWM52 (official war diaries), 'Official War Diary of DGMS'.

Australian War Memorial archival file, series AWM 54, item 481/1/25, 'ADMS visits to Maroubra Force: Reports on medical situation—care and evacuation of sick and wounded, Ioribaiwa area'.

Australian War Memorial archival file, series AWM292, item Med 40/76, 'Personal letters to DGMS 27 December 1939–12 May 1943'.

Australian War Memorial archival file, series 3DRL/6643 (Papers of Field Marshal Sir Thomas Albert Blamey).

Brune, Peter, *A Bastard of a Place: The Australians in Papua: Kokoda, Milne Bay, Gona, Buna, Sanananda*, Crow's Nest (New South Wales, Allen & Unwin, 2003.

Dennis, Peter, Grey, Jeffrey, Morris, Ewan, Prior, Robin & Bou, Jean (eds), *The Oxford Companion to Australian Military History* 2nd edition, Melbourne,, Oxford University Press, 2008.

Fitzsimons, Peter, *Kokoda*, Sydney, Hodder Australia, 2004.

Gill, George Hermon, *Royal Australian Navy, 1942–45* Volume II in Series 2 (Navy), *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1968.

Gillison, Douglas, *Royal Australian Air Force, 1939–42* Volume I in Series 3 (Air), *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1962.

Hetherington, John, *Blamey: Controversial Soldier—A biography of Field Marshal Sir Thomas Blamey, GBE, KCB, CMG, DSO, ED*, Canberra, Australian War Memorial and the Australian Government Publishing Service, 1973.
Howie-Willis, Ian, *A medical emergency: Major General 'Ginger' Burston and the Australian Army Medical Service in World War II*, Sydney, Big Sky Publishing, 2012.
Howie-Willis, Ian, *An unending war: The Australian Army's struggle against malaria, 1885–2015*, Sydney, Big Sky Publishing, 2016.
McCarthy, Dudley, *South-West Pacific Area—First Year: Kokoda to Wau*, Volume V in Series I Army, *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1959.
McLeod, Jan, *Shadows on the Track: Australia's Medical War in Papua 1942–1943, Kokoda–Milne Bay–The Beachhead Battles*, Sydney, Big Sky Publishing, 2019.
Norris, F. Kingsley, *No Memory For Pain: An Autobiography*, Melbourne, William Heinemann Australia Pty Ltd, 1970.
Paull, Raymond, *Retreat From Kokoda: The Australian Campaign in New Guinea 1942*, Richmond (Victoria), William Heinemann Australia, 1958.
Quail, Geoffrey Grant, *Lessons learned: The Australian Military and Tropical Medicine*, Sydney, Big Sky Publishing, 2017.
Walker, Allan S., *Clinical Problems of War*, Volume I in Series 5 (Medical), *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1952.
Walker, Allan S., *The Island Campaigns*, Volume III in Series 5 (Medical), *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1957.
Wigmore, Lionel, *The Japanese Thrust*, Volume IV in Series I (Army), *Australia in the War of 1939–1945*, Canberra, Australian War Memorial, 1957.
Wikipedia entries: 'Battle of the Coral Sea'; 'Battle of Buna-Gona'; 'Battle of Midway'; 'Battle of Midway'; 'Battle of Milne Bay'; 'Kokoda Track campaign'.