

The Good Friday Typhoon of 1907 and its aftermath in the Mortlocks, Caroline Islands

by
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INTRODUCTION

GIVEN THAT TYPHOONS ARE QUITE A COMMON OCCURRENCE IN MICRONESIA, THE ATOLL COMMUNITIES TRADITIONALLY DEVELOPED AND MAINTAINED EXTENSIVE EXCHANGE NETWORKS TO CATER FOR THE period of starvation that would inevitably follow. The atolls of the Mortlocks were no exception. The first typhoon on (European) record for the Mortlocks ocurred in 1874, devastating *Lukunor Atoll* (5°31'N 153°46'E). A typhoon wave set-up inundated the island, leaving many people dead and the survivors starving. The impact was still felt a year later, as a visitor described the houses as 'miserable huts' and the taro patches being of a 'neglected' appearance. Given the proximity, we can assume that *Satawan Atoll* (5°25'N 153°35'E) would also have been affected.

Typhoons as far south as the *Mortlocks* are quite uncommon, but are on the record for early December 1935 when a typhoon struck *Etal, Satawan* and *Lukunor* and then continued on to affect *Chuuk*.³

The best-documented typhoon in the Carolines is that of Good Friday 1907. On 26 March 1907, a typhoon struck the atolls of the Mortlock Group, affecting mainly Satawan and Lukunor in the Western Carolines. On both atolls it exacted a high price in human life. The typhoon then continued along a western path and affected most Western Carolinian atoll groups, either with wind and wave action or, more often, 'only' with a wave action.

This brief study will describe the effects of that typhoon on the Mortlocks and the resulting efforts by the German administration of offset the typhoon effects.

THE GOOD FRIDAY TYPHOON

SOMETIME IN LATE MARCH A TROPICAL DEPRESSION FORMED EITHER IN OR JUST TO THE EAST OF THE SOUTHERN MARSHALL ISLANDS. PUSHED WEST BY THE TRADE WINDS, THE SYSTEM GRADUALLY GATHERED strength, developing from a tropical storm into a typhoon. On 26 March 1907, the system struck the atolls of the Mortlock Group, affecting mainly Satawan and Lukunor in the Western Carolines. On both atolls it exacted a high price in human life. The typhoon then continued along a western path and affected most Western Carolinian atoll groups, either with wind and wave action or, more often, 'only' with a wave action

Given the time and data information gleaned from the various historical reports we can not only reconstruct the typhoon track with some accuracy, we can also calculate a forward speed of the typhoon of about 15 knots (Table 1).

Lukunor, the main and eponymous island located on the windward side of the atoll (5°31'N 153°46'E), suffered most in the typhoon, while the leeward islands suffered less. On the morning of the 26 March a strong northwest wind could be felt, which by lunch had moved through north to northeast. Between 08:00 and 09:00, the sea inundated the island before the winds arrived. This was likely the long-range swell ahead of the typhoon. The wind reached its greatest strength about 02:00 the following morning (27 March).¹ The wind directions as described are not very detailed but suggest that the typhoon passed to the south.²

Table 1. The track of the Good Friday typhoon of 1907.³

Date/ Time	Atoll	Impact	Fatalities	Land loss?
26 March		r		
09:00	Ngatik	wind & waves		
09:00 to 24:00	Nukuoro	wind & waves		
08-09:00 to 02:00	Lukunor		14	yes
27 March				·
	Etal		7	
	Satawan	wind & waves	206	yes
	Namoluk	wind & waves		•
16:00	Chuuk	waves & strong E then S wind	_	
28 March				
00:00	Losap	wind & waves		
	Pulusuk	wind & waves		
	Puluwat	wind & waves		
	Satowal	wind & waves	4	yes
00:00	Lamotrek	wind & waves	_	yes
	Elato	wind & waves	7	yes
	Olimarau	wind & waves	uninhab.	yes
	Ifaluk	wind & waves	35	yes
29 March				
00:00	Woleai	wind & waves	200	yes
	Sorol			
	Eaurepik	wind & waves	_	yes
30 March				
	Fais			
	Ulithi	wind & waves	_	

On Lukunor 14 people died in the storm surge. All breadfruit trees were pushed over or were exfoliated. Jeschke anticipated that it would take about ten years for the breadfruit trees to sprout again from their root systems and to bear fruit.⁴ The taro patches were flooded and scorched by the salt water. It seems that the typhoon was accompanied by intensive rainfall prolonged enough to dilute the saltwater inundation. The southeastern section of the island was breached over a width of about 100 meters. The main damage, however, occurred to the islets on the western and northern side of the atoll. On Oneop, an islet on the leeward side of the atoll, some breadfruit trees and the taro patches remained almost unscathed. Despite this the food supply on Oneop was not sufficient to feed to entire atoll population.⁵

On Satawan Atoll (5°25'N 153°35'E), the main winds and seas came from the south, affecting mainly the southern islands (Figure 1). According to an eyewitness, chief Robert Firmas, the storm surge reached the height of coconut palms.⁶ Even when taking foam-cresting into account, the estimate suggests wave height of 8–15 meters. On wonders how anyone could survive this. Indeed, only few did. The impact on Satawan was very severe, with 131 fatalities on the island of Ta, 31 on the island of Satawan itself and 2 on the islet of Modj.⁷ In his 1908 report, Hahl mentions 170 fatalities for Ta, which may include some famine victims.⁸

All breadfruit trees were destroyed and those few coconut palms that were left standing were devoid of fruit. All buildings on Satawan Island were blown over, and only the walls of the school building, which had been erected from stone (coral blocks), survived the wind impact. On the island of Ta the typhoon was even more destructive. Not only were houses, canoes and people washed off the islet, but the entire island was stripped of its ever so limited and thus very precious topsoil.⁹ This damage to the island was long-lasting.

Apparently, many people on that island were washed off by the sea. Some 30 survived the ordeal and were washed up on the island of Kutu on the other side of the lagoon, some 35 kilometers away. Many survivors were so weakened by the ordeal that most of them died soon after.¹⁰

The typhoon impact on the atoll was differential, with the southwestern islets bearing the brunt of the storm surge. The Tosson Group as well as Fataisomor suffered in the typhoon, but not as much as Satawan.¹¹

The uninhabited island of Onupuku did not suffer at all and its copra production was not affected.¹² The main damage to the food supply was caused by the inundation of the taro patches with salt water and the chlorination of the breadfruit trees.¹³

The schooner of the Jaluit Gesellschaft *Carl and Ella*, which had successfully survived the April 1905 typhoon *en route* to Pohnpei, sank near Satawan Lagoon, just off Ta Islet. Captain Ubbo Wamers of Emden and all but two of the crew died in the storm. ¹⁴ According to the official report four passengers survived when the vessel capsized in the open sea. ¹⁵

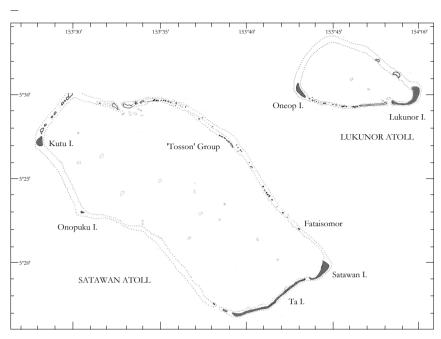


Figure 1. Map of Satawan and Lukunor Atolls and the localities mentioned in the text.

Etal Atoll (5°34'N 153°35'E) did not suffer extensively with the exception of the eponymous islet Etal itself, where breadfruit and taro plantations were severely damaged by salt water inundation and salt spray. Krämer reports seven fatalities for the atoll, which suggests that flooding was quite severe, while the wind damage remains unassessed. According to the trader Janssen, the remaining islets of the atoll could provide enough food to support the atoll population. 17

Namoluk (5°55'N 153°40'E) was affected by the typhoon, but compared to the devastation wreaked on Satawan and Lukunor the damage was only slight. Ames Islet, at the south-western end of the lagoon, was inundated by the storm waves. Despite the damage, no one was killed in the event and the food shortage was not so pronounced that an evacuation of part of the people was necessary. Wind damage to coconuts, and presumably also breadfruit, is reported. On the people was necessary.

DISASTER RELIEF

VERY SOON AFTER THE EVENT AND DESPITE THE DAMAGE TO THEIR OWN ATOLL, CANOES FROM LUKUNOR WENT TO SATAWAN TO ASSESS THE MAGNITUDE OF THE DAMAGE ON THAT ATOLL. WHILE THERE IS no indication on the actions taken, we can assume that the voyage was initiated to assess the fate of clansmen and relatives on the other atoll.

DISASTER RESPONSE

Pierre Nédélec, French trader on Satawan left soon after the typhoon to Chuuk to report the event to the German representative of the Jaluit Gesellschaft, Janssen, arriving there on 8 April 1907. As Nédélec was not prepared to leave immediately and directly for Pohnpei, but preferred to make the trip via the Mortlocks (both to shuttle food there and because he was more familiar with the Mortlock-Pohnpei run), Janssen accompanied Nédélec with a boat from Chuuk. *En route* to Satawan Janssen stopped at Losap, Namu, Namoluk and Etal. Janssen gave (sold) Nédélec all food reserves he could spare, and Nédélec was able to sell it all immediately upon his arrival in Satawan. Nédélec then sailed onwards to Pohnpei to report to the German Vice-Governor, while Janssen returned to Chuuk. Nédélec arrived on Pohnpei on 30 April 1907, about one month after the event and delivered to Girschner not only an eyewitness account of the typhoon, but also Janssen's report and two brief letters from Lukunor and Satawan chiefs requesting assistance from the German government.²

To offset the impending starvation, with remaining food stocks expected to last for only four weeks, and to provide immediate assistance to the people on Satawan and Lukunor Max Girschner hands the following DISASTER RELIEF 7

items to Pierre Nédélec for onwards transport to the affected atolls and hand over to designated chiefs:³

- 7995 pounds rice (from government supplies);
- -2 tons of rice (bought from stores);
- 60 iron cooking pots;
- 220 Engl. pounds of fishing lines;
- 140 Engl. pounds fishhooks of assorted sizes; and
- 6000 pieces of small fish hooks.

In tht list of supples the emphasis on self sufficiency is remarkable. The chiefs had been instructed by letter how to divide up the supplies thus provided. Girschner comments on the shortage of shipping available to him, as the Jaluit Gesellschaft schooner had sunk in the event, and the government vessel *Ponape* had still not returned (it had just ridden out the same typhoon in Oleai) and the small 8 GRT vessel of Nédélec's had no space left. Girschner deplores that he is unable to inspect the disaster area and that he has to make arrangements by distance communication.⁴

In addition, Girschner, a letter to Janssen to be delivered by Nédélec, requests that the *Germania* stop at Satawan and Lukunor *en route* from Chuuk to Pohnpei to deliver to the chiefs 2 $^1/_2$ tons of rice, which formed part of an consignment destined for the German government in Pohnpei. The *Germania*, which was scheduled to arrive in Chuuk on 27 May 1907, was also required to evacuate all remaining inhabitants of Ta, some 300 people, and to move them to Pohnpei, and to stop over at Ngatik to assess the damage there, if any.

Despite this immediate action by the German authorities, during a famine occurred in the following year during which some 40 people died on of Ta in Satawan lagoon and approximately 60 on Satawan itself.⁷ The remainder of the people were still starving because the food resources had not recovered, and because the taro pits, still inundated with salt water, had not recovered. As a result the taro that had partially of fully grown at the time of the typhoon had begun to rot.⁸

In 1908 the famine conditions were still strong, mainly on Satawan, with Etal and Lukunor experiencing only food shortages.

News of the typhoon had reached the German administration on Saipan when the *Ponape* arrived there the morning of April 4^{th.9} Georg Fritz decided to commandeer the *Germania*, which was scheduled to arrive on the 9th of April¹⁰, to take him to Oleai to investigate the situation and to deliver, as a measure of first line assistance RMK 2,000 worth of foodstuffs, mainly

rice, hard bread and some tinned food purchased from the trading companies, and sweet potatoes, melons and bananas purchased from the local population. On the day of the *Germania's* arrival Fritz departed for Oleai.

Table 2. Chronology of disaster relief measures in 1907 (bold entries refer to the Mortlocks)

Date	Event
March 27-28	Typhoon strikes atolls in the E Carolines
March 28-30	Typhoon strikes atolls in the W Carolines
April 4	The battered <i>Ponape</i> , having survived the tyhoon near Oleai, arrives in Saipan
	Fritz commences disaster management operations
April 6	As time tabled, the Germania leaves Chuuk for Yap & Saipan
April 8	Nédélec arrives in Chuuk
April 9	Germania arrives at Saipan & Fritz commandeers the vessel & leaves for Oleai
April 10	Janssen investigates Mortlocks from Chuuk
April 11	Germania arrives in Oleai
	Japanese schooner arrives at Yap
April 12	Germania arrives in Ifaluk
April 14	Germania arrives in Yap
	SMS Planet departs Yap for Ulithi
April 15	SMS Planet arrives in Ulithi
April 18	SMS Planet arrives Yap with 114 evacuees
May 1/2	Girschner sends supplies to Mortlocks
June, end	Germania delivers 2 tons of rice to Mortlocks
June 30	Hahl on Seestern inspects Olimarau
July 1	Hahl inspects Elato
July 1	Hahl inspects Lamotrek
July 1	Hahl inspects Satawal
July 23	Lewis arrives in Yap to report damage on Lamotrek
Sept 15	Hahl inspects Satawan on board Seestern,
	evacuates some people
Sept 16	Hahl inspects Lukunor,
	evacuates some people
Sept 17	Hahl lands some evacuees on Chuuk
Sept 20	Hahl lands some evacuees on Pohnpei

When the news of the typhoon reached Saipan, Fritz already had his cases packed and was in the final preparations to depart on his furlough (biannual leave). His trip to investigate the damage on Oleai was actually conducted on the voyage back to Berlin (via Sydney).

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PLANNING THE DISASTER RECOVERY

By the time the news of the Mortlock typhoon had reached Pohnpei on 30 April 1907, the administration there was, to a degree, in chaos. Dr. Victor Berg, Vice Governor and Chief of Administration, had died a month earlier of a heatstroke that he had incurred when investigating the ruins on Nan Madol. The required immediate disaster relief action was left to his assistant, Dr. Max Girschner, a general physician on Pohnpei since the commencement of the German administration in October 1899, and a man who had managed the health affairs of the colony at the time of the 1905 typhoon. He was certainly well qualified to deal with the situation and enjoyed the respect of the local community, both indigenous and expatriate alike.

Upon the news of the impact of the Good Friday typhoon on the Mortlocks acting Vice Governor Max Girschner assumed that evacuations may need to be carried out. This was based on the report of the German trader Janssen who stated that the anticipated food shortage on Lukunor could be overcome within a year if part of the population resident on the worst affected islands could be induced to emigrate. Janssen recommended to deport a large number of people from Lukunor and Satawan, and to supply the few people left behind with a small quantity of food to ensure their survival until the food plants have recovered.

Based on the previous experiences with the evacuation of the Pingelapese in 1905, Girschner, who was the German Physician on Pohnpei, assumes that state of health of the survivors would be poor and that prolonged care would be necessary. Preliminary inquiries were made which showed that Pohnpeians were prepared to accommodate and feed the Mortlockese if they agreed to work for the Pohnpeians for a certain period of time for board and lodgings only. The Protestant mission was also prepared to house and feed 50 individuals. Girschner intended to accept these offers as this would relieve the German government from the need to feed and shelter the typhoon refugees. Girschner stressed that the time period for the unpaid labour cannot be predetermined as it depended on a number of factors, such as the number people (per family) and their state of health. He concludes with the remark that any conflict would be settled by the German administration. 12

In the Western Carolines Georg Fritz also expected the need to send large numbers of evacuacees to both Saipan and Palau. In his planning for the investigations of the atolls he was acutely aware that his diversion of the *Germania* could only allow him to investigate Oleai and any of the atolls in

direct line between Oleai and either Saipan or Yap. Any further deviation would be out of the question. He therefore planned that Governor Hahl, whom he would brief in person *en route* to Sydney should use the government vessel *Seestern* on its annual inspection tour and visit those atolls not reached by the *Germania*. He also ordered that the naval vessel SMS *Planet*, already in the area of for hydrographic mapping work and other reasons, should be ordered to inspect Ulithi once it returned to Saipan.

In the meantime, the Japanese vessel *Chomai Maru No 2*, which had to cut its masts in the typhoon off Ulithi, had made it back to Yap and reported the event. On 11 April the acting district administrator sent a telegram fro Yap to the German naval Command in Berlin requesting that the *Planet* be sent to Ulithi, as there was no other means, within the next four weeks, to visit Ulithi and render the approximately 800 people there with emergency food relief and medical help.¹³ As the *Planet* is ready to sail for Ulithi on the 14th, the *Germania* arrives in Yap with the news of the situation on Oleai and Ifaluk.



Figure 2. The Germania at Chuuk in April 1907¹⁴

Meanwhile, Fritz remained in Yap organising the relief operation. The *Planet* returns from Ulithi on 18 April, with 114 evacuees. Fritz sent a telegram to Berlin appraising the colonial office of the situation. Unaware of the problems in the Mortlocks, Fritz requested in this telegram that he be permitted to change to return schedule of the *Germania* to allow for less time in Pohnpei and more time in the Saipan area to provide future aid. Further that the casualties amounted to 230 people, that the coconut palms had largely been destroyed, and that he wished to relocate as many people as possible to Palau and Saipan. Further, he requested an additional RMK

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25,000 for his budget to obtain emergency food and medical equipment.¹⁵ In his assessment of the typhoon damage Fritz was pessimistic about the speed and magnitude of recovery.¹⁶ To relieve this pressure, Fritz had intended to move the majority of the people to other islands, mainly Palau and Saipan. Fritz intended to evacuate 200-300 of the approximately 400 strong population of Ifaluk, where 25 had perished in the storm, to Palau. He also wished to move 200-300 of the formerly 1000-strong population of Oleai to Saipan.¹⁷

FEEDING THE PEOPLE

On 12 September 1907 Governor Albert Hahl took the opportunity to visit the atolls of the Mortlock Group en route from Herbertshöhe to Nauru. On Satawan Hahl found toppled trees and collapsed houses. On Ta the loss of the topsoil raises doubts as to whether the island can be settled again at all. As a relief measure Hahl handed out 2400 lbs of rice each on Ta and on Satawan Islands. In addition, Hahl approved the local request to move a number of people who asked to leave to Pohnpei and Chuuk to live with relatives and clans people. All in all 68 men, 51 women and 50 children were evacuated from Satawan and Ta, with about 190 people remaining. On Lukunor Hahl noted a devastation similar to that on Satawan. On Lukunor 14 people had died in the storm event. And only another 13 were reported to have died in the subsequent starvation period. On Lukunor Hahl also hands out rice (2600 lbs) and agrees to take 82 men, 180 women and 198 children to Chuuk and Pohnpei under the condition that the most able-bodied men and women remain to continue the clean-up and the rehabilitation of the atoll.¹⁸ Upon arrival on Chuuk Hahl leaves it to the Chuukese chiefs to pick out those relatives and clansmen who may remain on Chuuk. All the 'unwanted' were taken along to Pohnpei.¹⁹

The Tosson Group as well as Fataisomor have suffered in the typhoon, but not as much as Satawan. There was no need for emergency relief at both locations.

As mentioned, on Satawal Hahl encountered a number of very large canoes from Ifaluk, whose crew was waiting for favourable winds to return to their home atoll. No mention is made whether the Ifaluk people had been on Satawal during the typhoon, or whether they had arrived at a later point in time,²⁰ possibly because their food situation had worsened as predicted by Fritz on occasion of his visit on April 12th.²¹

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Evacuated from	Date	Men	Women	Children	Total	Evacuated to	Left behind
Lukunor	May 1907				400	Pohnpei & Saipan	
Satawan	May 1907				300	Pohnpei	
Lukunor	16 Sep 1907	82	180	198	460	Pohnpei & Chuuk	40 families
Satawan	16 Sep 1907	68	51	50	169	Pohnpei & Chuuk	190
Satawan/Lukunor	late 1907				44	Saipan	
Satawan	May 1908			42	105	Pohnpei	
Oleai (Yap)	May 1907				87	Saipan	
Oleai	June 1907				199	Saipan	
Ulithi	14 Apr 1907				114	Yap	

Table 3. Evacuations as a result of the Good Friday 1907 typhoon —evacuating atolls

Table 4. Evacuations as a result of the Good Friday 1907 typhoon —receiving localities

Evacuated to	Date	Men	Women	Children	Total	Evacuated from
Chuuk	Sept 1907	109	178	183	470	Satawan, Lukunor
Pohnpei	May 1907				757	Satawan, Lukunor
Pohnpei	Sept 1907	41	53	65	159	Satawan, Lukunor
Pohnpei	May 1908			42	105	Satawan
Saipan	May 1907					Satawan, Lukunor
Yap	May 1907				87	Oleai
Saipan	June 1907				199	Oleai
Saipan	late 1907				44	Lukunor
Yap	Apr 1907				114	Ulithi
onwards movement						
Saipan	May 1907				87	Yap (ex Oleai)

Table 5. Relief Missions to the Mortlocks

Atoll	Date	Vessel	Food delivered	Population evacuated
Satawan	5 February 1908	Germania	200 bags rice	105
Satawan	10-12 December 1907	Germania	3 tons rice	
Lukunor	10-12 December 1907	Germania	3 tons rice	44
Etal	10-12 December 1907	Germania	??	
Etal		Condor		
Mortlocks	May 1907	Germania	2 tons rice	757

In late May 1907 the *Germania* delivered two tons of rice to the Mortlocks and evacuated 757 people to Pohnpei, among them former German trader Ahlers and his Mortlock family.²² While two of the Mortlockese evacuees died soon after arrival, all others were quickly taken up by the Pro-

DISASTER RELIEF 13

testant missionaries and the Pohnpeians. Since all Mortlockese were mainly Protestant, they were primarily sent to the Kiti and Madelonimwh Districts.

Despite the economic losses the company had sustained, the Jaluit Gesellschaft was prepared to come to the German government's aid—as long as no extra costs arose. In August 1907 the head office of the Jaluit Gesellschaft billed the German government the sum of RMK 1914 for the transport of 757 Mortlockese to Pohnpei, 87 Oleai people from Yap and 199 more Oleai people from Oleai to Saipan.²³ Subsequent requests by Arno Senfft for a special fare for the evacuees, led to the Jaluit Gesellschaft to offer free transportation, as long as the cost of provisioning the evacuees was met. In February 1908 the German colonial office paid RMK 252 for the provisioning of 44 people Lukunor which had been taken to Saipan,²⁴ and in April 1908 RMK 168 for the provisioning of 105 Satawan people which had to be moved to Pohnpei (see below).²⁵

In late 1907 the German postal steamer Germania again visited the Mortlock atolls to deliver more rice to the people.²⁶ The directive had been to deliver three tons of rice to Makaia, chief of Satawan, three tons of rice to Enery, chief of Lukunor, and to stop at Etal to assesses the situation. The ship was ordered to take all those who wished to leave to Saipan²⁷ The captain of the Germania reported that the people on Satawan and Lukunor had been starving and resembled weak walking skeletons. Reputedly 45 people from both atolls had been drifted off while fishing and had been too weak to make their way back to the islands. The taro patches on Lukunor had been rehabilitated while nothing at all had happened on Satawan. That atoll very much resembled its appearance after the typhoon. Because Saipan was unknown to the people, only 44 men, women and children from Lukunor agreed to be evacuated to there. The situation on Etal seemed to have been much better, and most people appeared to be well nourished.²⁸ By 1910 many of the refugees had returned to their home atolls, with Lukunor supporting a population of 642 people and Oneop a population 374.29

CONTINUING FOOD AID

In January 1908 news had reached Chuuk via Pierre Nedelec, that the food supply on Satawan was in a bad state and that help was urgently needed. Regierungsrat Stuckhardt, on board of the *Germania en route* to his new posting as district administrator of the Marshall Islands, requisitioned the *Germania* to go to Satawan and to deliver 200 sacks of rice (at 45 lbs each), to three

islets of the atoll. On 5 March 1908 the rice was delivered and 105 people evacuated to Pohnpei.

According to information provided by the chief of Mot to Wilhelm Stuckhardt, sixty people had died in December 1907 with about 200 people remaining. The recent replanting on Mot had been destroyed by inundation of seawater that seemed to have seeped in from below. Fifty people, mainly women and children took up the offer of evacuation. Stuckhardt landed 75 bags of rice to Mot.

On Kuttu some thirty had died since December, with some 300 remaining on the islet. On the whole the people of Kuttu are described as better fed than those on Mot. Stuckhardt again takes on board about 50 women and children and hands out 75 bags of rice.

On islet of Satawan, the last of those visited, the inhabitants appeared 'the way natives look like under normal circumstances.' Only 10 people had died since December, with about 160 remaining. Stuckhardt commented on the fact that little had been cleaned up and that no taro had been replanted. Only one woman wished to be taken to Pohnpei. Stuckhardt hands out 40 bags of rice. The native teacher on Ta, who was on Satawan at the time, was given 10 bags of rice to distribute on Ta.

Stuckhardt stressed that the people should ration the rice and not 'eat it all at once in one of these large feasts,' that they should pay attention to Gardening at the government could not continue to supply food for ever.³⁰

When the *Germania* arrived at Pohnpei, another problem arose: the vessel run aground in sight of the harbour. The lack of shipping at the time meant that only canoes could come out to render assistance. Stuckhardt, still taking charge, insisted that the Mortlockese be the first to be taken ashore to Pohnpei. After much of the cargo had been jettisoned, the *Germania* could be refloated, but drifted about as the propeller had been damaged.

Stuckhardt's role in this is quite clear from the official records, but is kept completely out of the printed evidence. The official Government report, prepared for publication in the *Deutsches Kolonialblatt*—of course—stated that the District Administrator of Pohnpei went to investigate, with no mention of Stuckhardt's fortuitous presence and actions.³¹

RESETTLEMENT

THE OUTER ISLANDERS HAD BECOME A POLITICAL LIABILITY FOR THE GERMAN COLONIAL DISTRICT ADMINISTRATION IN KOLONIA AS THEY could have served as mercenaries in the district conflicts that had been developing on Pohnpei.1 The Marianas, on the other hand, were politically more stable than Pohnpei, and a massive influx of labour was not regarded to present any problems for the administration. Indeed, there was a population deficit on that island that the administraion was eager to rectify.² From 1906 onwards the phosphate mining on Nauru was developed into a large commercial operation, which yielded substantial revenues to the Jaluit Gesellschaft as a share holder, and the German government as the land owner. The work force required to operate the extraction came mainly from China.³ Yanaihara mentions that Mortlockese and Chuukeese were used as well.⁴ At present there is no documentary evidence that the German government used the availability of typhoon evacuees from Pingelap (in 1905) and the Mortlocks (in 1907) as cheap contract labour, even though the opportunity certainly presented itself.

RESETTLEMENT POLICY

But there was also a different line of thinking involved. The German colonial administration had fostered the 'import' of workers for the plantations. Thus, the German Jaluit Gesellschaft imported 60 Carolinians to work on the newly established copra plantations on Ujelang in the Marshalls.⁵ In 1903 there were still 48 Carolinians at work for the Jaluit Gesellschaft (on Jaluit).⁶ Both Palau and Saipan were seen as underpopulated in urgent need of a population 'injection' to boost their economic prospects. Thus both Palau and Saipan competed for the resettlement of the typhoon victims. The

resettlement of the typhoon victims was not to be without obligation to those relocated: all evacuees had to fulfil a work quota for the German government, comprising of 12 days of annual labour obligations and 3 days of obligations in lieu of copra tax.⁷

By 1908 a motley group of Carolinians resided on Saipan. The Spanish had settled people from Oleai, Satawal and Lamotrek,⁸ and the Germans had settled people from Sonserol, Meriri Pulo Anna and Tobi, Oleai, Ulithi, the Mortlocks and Pingelap.⁹ In addition to these evacuees, the German government sent prisoners and exilees to Saipan, in te hope that with their exposure to the island and its potential they could become the vanguard of a major voluntary resettlement.¹⁰

In October 1909 Albert Hahl spelled out the agenda in full: all remaining inhabitants, if any, from Oleai, Satawal, Lamotrek, Olimaran, Ifaluk, Ulithi and Elato should be relocated to Palau and Saipan, with the resettlement of Feis, Tobi and Sonsorol given a lower priority. The evacuated atolls could then be acquired by the German government to allow them to be leased out for productive coconut plantations.¹¹

One of the major concerns in this reasoning seems to have been the exclusion of the Japanese trading competition. ¹² Hahl recommends that Oleai be depopulated and that the inhabitants be shipped to Palau—the Phosphate Co. of Angaur could assist with one of its ships—especially as they needed workers. ¹³ The tone of the letter, as well as the detailed reference to previous correspondence, indicates that the district officer in yap, Dr. Arno Senfft, was not in full agreement with Hahl on the matter.

GERMAN APPROACHES TO RESETTLEMENT

In 1908 German government sent twelve Micronesians from the Mortlocks, Ifaluk, Oleai and Satawal, led by the Lukunor chief Aenery to Saipan to investigate the possibilities of long-term resettlement there.¹⁴

In June 1908 Fritz reports to the German Governor Hahl that the colony on Saipan was read to receive several hundred settlers in the east of Saipan, where the harbour developments at Laulan and the road from Garapan to Laulan were about complete. One hundred and fifty-two people from Oleai and 74 people from Mogemog on Ulithi had been settled in a 'closed' village on the road to Laulan. Fritz comments that they had settled in well, while the 45 Mortlockese, who had come earlier, had more problems because they were culturally and linguistically very different from the others.¹⁵

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Even though the members of the Mortlockese survey party did not like what they saw and did not wish to be relocated, Fritz argued that he would have them moved anyway, since there was 'room for all.' In the interest of the Oleai people on Saipan he requested to move also the remainder of the atoll population of Oleai to Saipan. If this would be done, 'then there is still half of the atoll peoples that must be moved left over for Palau.' ¹⁶In addition, even though some of the evacuees on Saipan had clearly expressed a desire to return to their home atolls, the German government was not interested in such representations. Fritz, for example, consoled the people of Oleai by telling them that remainder of the people would also be resettled on Saipan in the near future!. ¹⁷

The Mortlockese on Pohnpei were ordered to be moved to Saipan in December 1908. The commander of SMS *Jaguar*, Corvettenkapitän Boland, was asked to assist and to accompany the transport, which was to take the Mortlockese to Saipan. ¹⁸ This was accomplished on 9 January 1909, when the *Diana* dropped off the 600 Mortlockese on Saipan, after it had dropped off troops on Pohnpei. ¹⁹

The resettled Mortlockese on Saipan had a hard time when in mid 1909 the rains largely failed. Given their short stay on the island until then, they had little reserves as their own maize fields had not yet produced and the wild (unclaimed) breadfruit trees had failed. The Mortlockese were then offered public work opportunities, the planting of government coconut plantations, to earn money so that they could buy food. To add to their problems, any gains they may have made, were wiped out again when on 2/3 October 1909 a typhoon struck Saipan, blowing off all remaining breadfruit and totally destroying the maize harvest while at the same time extensively damaging the banana-plantations. The German government again offered help through payment for labour rendered in completing government projects.

Others had been sent to Government or private coconut plantations on the northern islands of the Marianas. The Carolinian workers on Agrigan, for example, experience two typhoons in 1909.²² Carolinians had also been resettled on pagan, to work on the plantations there. Freiherr von Rummel, visiting the island in 1909, comments that 'the happy and worry-free Caroline tribe living there had already forgotten all dangers derived from storms and typhoons, and was happy and in good spirits.'²³ This kind of propaganda in the colonial media, woven into para-ethnographic narratives, projected a picture of benevolent governmental assistance.

Little has been made yet of the cultural re-education the Mortlockese went through on Saipan. Maize, a staple food in the late colonial Spanish era, and common on Saipan and the Marianas, was unknown to the Mortlockese. Not only had they to learn how to process the corn (grinding of cereal was not known to the atoll populations), they also had to learn to propagate and tend cereal crops, very unlike the tuber-based horticulture they had been used to.

REVERSING THE POLICY

In December 1909 SMS *Condor* went to investigate the situation in the Mortlocks. At that time, according to the summary given, 600 Mortlockese had been sent to Saipan, 1000 to Chuuk and 400 to Pohnpei As Hahl had the intention to totally depopulate the atolls and to acquire them for the German government, the german administration received with considerable concern the news that some Mortlockese had returned from Chuuk on their own volition.²⁴ The *Condor* encountered 685 people on the atoll, according to census estimates provided by a Lukunor Chief (Table 6).²⁵

Table 6. Population census Mortlock Group December 1909.

Atoll	Islet	Population
Satawan	Satawan	150
	Та	70
Lukunor	Lukunor	165
	Oneop	200
	Soponur	_
Etal	Piafa	100

Kranzbühler stated that even though the ravages of the typhoon could still be seen, all mature coconut palms were producing, and that supply by far exceeded demand. Indeed, many nuts were left on the ground unprocessed. The difference in post-typhoon relief between Satawan and Lukunor was again noted. While on Lukunor all houses were well build and made a tidy impression, where good canoes existed and where the taro patches were well tended with an abundance of plants, Satawan and Ta made a 'very primitive' appearance.²⁶

Kranzbühler urged that the government adopt one of two solutions: (i) to move all people from Satawan to Lukunor and to acquire Satawan for the German government; or (ii) to ensure that reliable traders settle on both Satawan and Lukunor, who could exhort the islanders to work and cur

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copra. He recommended the second option in view of the sedentary nature of the Mortlockese, their (cultural) preservation and their personal and community happiness—even though it might mean a reduced income for the German government compared with the other alternative. He argued that even if the island were depopulated to make way for a fully commercial copra plantation, the German government would have to find labourers to work the plantations.²⁷ On Oneop, Lukunor Atoll, the residents pleaded with Kranzbühler to have the evacuees return.

In the final summation, Kranzbühler sees no reason why the Mortlockese should not return to their home atolls should they so desire.

In a separate document of the same date (Yap, 30 November 1909) Kranzbühler comments that according to the Yap district administrator, Arno Senfft, the atoll people settled on Saipan were not at all happy, that they lived a live of idleness and without 'drive,' that they had to forego Thai habits and that only through force they performed labour or looked after their health. Kranzbühler argued that these circumstances mitigated against any attempt to relocate people into new environments—and that since the native populations were anyway declining, the problem of overpopulation soon would resolve itself.²⁸

This condemnation of resettlement practice was not without immediate success, as it had been addressed to the Colonial officers in Berlin. In addition, a copy would have been sent to the General staff of the Imperial German Navy, with the opportunity to bring it to the attention of the Emperor himself. In April 1910, the governor in Rabaul is directed to take into consideration the deplorable state of affairs and is required to provide a report on the matter within one year. The district administrators on Pohnpei and Yap had been advised to report to Hahl with a copy to Berlin.²⁹ By end of 1910 and early 1911 the majority of the Carolinians was shipped back to their home atolls.

OUTLOOK

IT WOULD APPEAR THAT AN OFFICIAL REVIEW OF THE TYPHOON MANAGEMENT ACTIONS WAS NOT UNDERTAKEN. WE CAN ASSUME THAT SOME FORM OF EVALUATION MUST HAVE TAKEN PLACE, AT LEAST IN AN informal manner. One of the common problems faced by the German colonial administrators was the shallow time depth of the environmental records. In many cases typhoons were described as 'the worst in living memory', which may well have been true, and thus would provide a recurrence interval ≥30 years. On the other hand, it may be an artefact caused by selective questioning of the usual 'authorities' consulted by the Germans. As a result, the German government was not fully capable of assessing the complexity of the situation and could not preplan their buildings and structures. It is telling that the 1905 typhoons in Saipan and in Pohnpei destroyed the new administration buildings some of which had been build after the take-over of the Carolines and the Marianas in 1899.

Some people on the ground, such as Georg Fritz and Max Girschner, had a good grasp of the complexities of post-typhoon situations. But it would appear that there was only a limited comprehension of the complexity of the issue in the Colonial Ministry in Berlin. The German Colonial authorities saw the typhoon as a serious threat. While the chief of the islands district (*ie* Marianas, Carolines and the Marshalls), Regierungsrat Dr. Kersting advocated the settlement of a small group of German farmers to run the small plantations, the German Governor General in Rabaul argued against it, using the typhoon threat as an issue. While it was unavoidable that the indigenous population was placed at risk, the was no need, so he argued, to expose others as well.¹

Some review occurred, but only by those people who felt personally compelled to act and comment: Upon reviewing the situation, the Commandeer of SMs *Planet*, Kapitänleutnant Kurz, commented that it was only

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due to fortuitous circumstances that the atolls of Ulithi, Oleai, Ifaluk and Sorol could be visited so soon after the typhoon. He stressed that other atolls would most probably have been in the path of the typhoon such as Ngatik, Namoi (Satwan and Lukunor), Namoluk, Satawal, Lamotrek etc, but that these could not be reached until end of May at the earliest. He used this example to stress the need for a station vessel each in Yap, Saipan and Chuuk, and compared the then current situation of the German Government to 'a chicken attempting to look after little ducklings swimming in a pond.' At least one station vessel should be acquired as soon as possible for service in the Western Carolines.²

The published German reports make repeated mention of the fact that the indigenous people of Micronesia used the presence of a government vessel and requested the evacuation and that the German government acceded to requests.³ This created the image that the German government was not the instigator of the relocations, which is quite contrary to the events.

The German Government saw typhoons as a local problem, a natural hazard endemic to the region. In its overall planning, however, little allowance was made for their occurrence. Little if any disaster mitigation and planning carried out. Many of the Government buildings were inappropriately designed, double-storeyed wooden structures with step roofs and large balconies.

It is also evident that no formal disaster response mechanisms had been developed and that the German administration managed the events *ad hoc* and as good as the individual administrators could. While it can be argued that the German authorities were not in power long enough to have developed these mechanisms, it is equally clear that at least the German navy was well aware of the typhoon/cyclone threat as that it was very reluctant to move any of its vessels into the Central Pacific during the typhoon season, a view more than vindicated in the great cyclone of Apia in March 1889 when the German Navy lost three vessels (*Eber, Adler* and *Olga*).

ENDNOTES

NOTES TO 'INTRODUCTION'

- Alexander 1895, p. 205, quoted after Nason 1975, p. 123
- ². Robertson 1877, p. 52.
- ³. OPNAV 1944, p. 6.

NOTES TO 'THE GOOD FRIDAY TYPHOON''

- ¹. Jeschke 1908.
- Spennemann (2004) estimated that the central pressure of the typhoon in the Mortlocks was about 991 hPa and that the eye passed some 30nm to the south of Lukunor.
- ³ Sources: Damm 1935; Damm 1938; Girschner 1907; Hahl 1907; Jeschke 1908; Krämer 1927; Krämer 1935; Krämer 1937.
- 4. Jeschke 1908.
- 5. Janssen in Girschner 1907.
- 6. Hahl 1908.
- ⁷. Krämer 1935, p. 30.
- 8. Hahl 1908.
- 9. Hahl 1908.
- ¹⁰. Janssen in Girschner 1907.
- 11. Hahl 1908.
- 12. Hahl 1908.
- ¹³. Janssen in Girschner 1907.
- ¹⁴. Janssen in Girschner 1907.
- 15. Girschner 1907b.
- ¹⁶. Krämer 1935, p. 30.
- ¹⁷. Janssen in Girschner 1907.
- 18. Janssen in Girschner 1907.
- 19. Marshall 1975, p. 166.
- ²⁰. Jeschke 1908.

NOTES TO 'DISASTER RELIEF"

- 1. Janssen to Girschner 1907.
- Girschner 1907.
- 3. Girschner 1907.
- 4. Girschner 1907.
- 5. Girschner 1907.
- 6. Girschner 1907.
- Hahl 1908.
- 8. Anon. 1908.
- 9. Fritz 1907.
- ¹⁰. Fritz 1907.

NOTES TO 'DISASTER RELIEF"

- Girschner 1907.
- 12. Girschner 1907.
- 13. On 12 April the German Naval Command agreed to dispatch the Planet from Yap to Ulithi and to provide food. Chief naval Command to AAKA JnR 1736I, dated 12 April 1907, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 7. May 1906 to July 1907. Verwaltungssachen 12f. file 3004. NLA Mfm G 18,242.
- Photo: Georg Fritz
- 15. Fritz Telegramme to RKA, dated 18 April 1907. AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 7. May 1906 to July 1907. Verwaltungssachen 12f. file 3004. NLA Mfm G 18,242.
- ¹⁶. Fritz 1907.
- Fritz 1907.—Fritz to Hahl, on board Germania 29 June 1908, AAKA Allgemeine Angelegenheiten

der Karolinen pp. Inseln Bd. 7. May 1906 to July 1907. Verwaltungssachen 12f. file 3004. NLA Mfm G 18,242.

NOTES TO 'DISASTER RELIEF'

- 18. Hahl 1908.
- 19. Hahl 1908.
- ²⁰. Hahl 1907.
- ²¹. Fritz 1907
- 22. Girschner, to AAKA Pohnpei 29 July 1907, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 7. May 1906 to July 1907. Verwaltungssachen 12f. file 3004. NLA Mfm G 18.242.
- 23. Hernsheim & Grösser to AAKA, dated Hamburg 14 August 1907, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 7. May 1906 to July 1907. Verwaltungssachen 12f. file 3004. NLA Mfm G 18,242.
- 24. Hernsheim & Grösser to AAKA, dated Hamburg 6 February 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.
- 25. Hernsheim & Grösser to AAKA, dated Hamburg 22 April 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005.

NLA Mfm G 18,242.

- 26. Requistioned by Girschner to RKA Pohpei 8 December 1907 No. 1199/219, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.
- 27. Girschner to Captain of the Germania, Flügel, Pohnpei 8 December 1907, J. 1198., AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to De-

- cember 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.
- ²⁸. Deutsches Kolonialblatt 19(6), 1908, 291.
- ²⁹ Krämer 1935, p. 31.

NOTES TO 'DISASTER RELIEF'

- 30. Stuckhardt to AAKA, dated Pohnpei 8 April 1908, no. 222/47, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.
- 31. Pohnpei 282/47, dated 8 April 1908. AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.

NOTES TO 'RESETTLEMENT'

- Hempenstall 1978, p. 91 ff.— Nonetheless some Mortlockese seem to have been killed in Sokeh's rebellion (cf. Nason 1975, p. 127). It is unclear, though, whether they had been recruited to work on Pohnpei of whether they were typhoon evacuees.
- ² Spennemann 2007.
- ³. Treue 1940.
- 4. Yanaihara 1940, p. 285.
- 5. Anonymous 1886.
- 6. Deutsches Kolonialblatt 1903, p. 275.
- Fritz to Hahl, on board Germania 29
 June 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.
- 8. Barrat 1988.
- Fritz to Kirn, 23 June 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA Mfm G 18,242.

- Fritz to Hahl 13 November 1908, AAKA Allgemeine Angelegenheiten
 - der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005.
- NLA Mfm G 18,242.

 11. Hahl to Fritz (Yap) 25 December
- 1909, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln
 - Bd. 9. December 1908 to December 1911. Verwaltungssachen 12f. file
- 3006. NLA Mfm G 18,242.

 Hahl to Fritz (Yap) 29 October 1909, AAKA Allgemeine Ange
 - legenheiten der Karolinen pp. Inseln Bd. 9. December 1908 to December 1911. Verwaltungssachen 12f. file 3006. NLA Mfm G 18,242.
- 13. Ibid.
- Fritz to Hahl, on board Germania 29
 June 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f.
- file 3005. NLA Mfm G 18,242.
 15. Fritz to Hahl, on board *Germania* 29 June 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f.
- file 3005. NLA Mfm G 18,242.16. Fritz to Hahl, on board *Germania* 29 *ibid*.
- 17. Fritz to Kirn, 23 June 1907, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to December 1908. Verwaltungssachen 12f. file 3005. NLA
- 18. Hahl to Boland, Herbertshöhe 19 November 1908, AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 8. August 1907 to De-

cember 1908. Verwaltungssachen

12f. file 3005. NLA Mfm G 18,242.

Mfm G 18,242.

 Chief Admiralstab Marine to RKA, Berlin 13 January 1909. A file notice mentions hat 629 Mortlock islanders

were shifted to Saipan.

- ²⁰. Anon. 1910.
- ²¹. Anon. 1910.

- ²². von Rummel 1910.
- ²³ von Rummel 1910.
- ²⁴. Kranzbühler, Korvettenkapitän (1909) Militärpolitischer Bericht Eurer Majestät Schiff "Condor" über eine Reise von Samoa über die Fidschi-Inseln nach Nauru, über den Aufenthalt in den Marshal-Inseln und die Reise nach Herbertshöhe und den Karolinen. AAKA Allgemeine Angelegenheiten der

Karolinen pp. Inseln Bd. 9. Decem-

ber 1908 to December 1911. Verwaltungssachen 12f. file 3006. NLA

- Mfm G 18,242.

 25. Commando Condor, item no. 1020, dated Pohnpei 11 December 1909. AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 9. December 1908 to December 1911. Verwaltungssachen 12f. file 3006.
- NLA Mfm G 18,242.

 Kranzbühler *ibid*.
- Kranzbühler *ibid*..
- 28. In this too, Kranzbühler would have had to rely on Senfft's opinion.
- 29. RKA Belin to Hahl, cc Yap and Pohnpei, file no. 600/10, dated 4 April 1910. Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 9. December 1908 to December 1911. Verwaltungssachen 12f. file 3006. NLA Mfm G 18,242.

NOTES TO 'RESETTLEMENT'

Kurz, Kapitänleutnant (1907) Mil-

1906 to July 1907. Verwaltungssa-

chen 12f. file 3004. NLA Mfm G

- ¹ Treue 1940, p. 71.
- itärpolitscher Bericht uuber den Besuch der Ululssi Inselgruppe. Kommando Planet no. 271, dated Pazifischer Ozean, 20 April 1907. AAKA Allgemeine Angelegenheiten der Karolinen pp. Inseln Bd. 7. May
- 18,242. 3. cf. Hahl 1908.

BIBLIOGRAPHY

- Alexander, J.M. (1895) *The islands of the Pacific. From the old to the new.* New York: American Tract Society.
- Anon. (1886) Die Verhältnisse auf den Marshallinseln. Deutsche Kolonialzeitung 3, 789-794.
- Anon. (1908) Die Notlage auf den Mortlock-Inseln. Deutsches Kolonialblatt 19, 744-746
- Anon. (1910) Stürme auf Saipan. Deutsches Kolonialblatt 21, 24.
- Barrat, Glynn (1988) Carolinian contacts with the Islands of the Marianas: The European record. *Micronsian Archaeological Survey Reports* 25. Saipan: Division of Historic Preservation, Department of Community and Cultural Affairs.
- Damm, Hans (1935) Die Inseln um Truk. 2. Halbband. Polowat, Hok, Satowal. In: G.Thilenius (ed.), Ergebnisse der Südsee-Expedition 1908-1910. II. Ethnographie, B: Micronesien. Vol. 6. Hamburg: Friedrichsen & de Gruyter.
- Damm, Hans (1938) Zentralkarolinen. II. Halbband. Ifaluk-Aurepik-Faraulip-Sorol-Mogemog. *In:* G.Thilenius (ed.), *Ergebnisse der Südsee-Expedition 1908-1910. II. Ethnographie, B: Mikronesien.* Vol. 10, II.Halbband: Hamburg: Friedrichsen & de Gruyter.
- Fritz, Georg (1907) Bericht des Landeshauptmanns Fritz in Saipan. Deutsches Kolonialblatt 18(12), 573-577.
- Girschner, Max (1907) Taifun in den Mortlock Inseln. Deutsches Kolonialblatt 18(17), 864-866.
- Girschner, Max (1907b) Ostkarolinen. In Medizinische Berichte über die Deutschen Schutzgebiete für das Jahr 1905/06. Herausgegeben vom Reichskolonialamt. E.S. Mitter & Sohn, Berlin. Pp. 303-309.
- Hahl, Albert (1907) Weitere Verheerungen des Taifuns. Deutsches Kolonialblatt 18(18), 891-892.
- Hahl, Albert (1908) Eine Reise nach den Karolinen und Marshallinseln. Deutsches Kolonialblatt 19(6), 92-94.

Hempenstall, Peter J. (1978) Pacific Islanders under German rule. A study in the meaning of colonial resistance. Canberra: Australian University Press.

- Jeschke, Carl (1908) Ein Taifun am 27., 28., und 29. März 1907 durch die Zentral-Karolinen. *Petermanns Mitteilungen* 1908, 137-138.
- Krämer, Augustin (1927) Die Entsehung der Korallen Inseln nach neuen Gesichtspunkten auf Grund eigener Untersuchungen. Stuttgart: E. Schweitzerbartsche Verlagsbuchhandlung.
- Krämer, Augustin (1935) Inseln um Truk (Centralkarolinen Ost) 1. Halbband. Lukunor-Inseln und Namoluk; Losap und Nam; Lemarafat; Naumito oder Onoun; Pollap-Tamatam. *In:* G.Thilenius (ed.), *Ergebnisse der Südsee-Expedition* 1908-1910. II. Ethnographie, B: Mikronesien. Vol. 6, 1. Halbband: Hamburg: Friedrichsen & de Gruyter.
- Krämer, Augustin (1937) Zentral Karolinen. I. Halbband. Lamotrek Gruppe Oleai Feis. In: G.Thilenius (ed.), *Ergebnisse der Südsee-Expedition 1908-1910. II. Ethnographie, B: Micronesien.* Vol. 10. Hamburg: Friedrichsen & de Gruyter.
- Marshall, M. (1975) Changing Patterns of marriage and migration on Namoluk Atoll. in V. Carroll (ed.), *Pacific Atoll Populations*. ASAO Monograph 3. Honolulu: East West center, University of Hawaii Press, Pp. 160-211.
- Nason, James D. (1975) The strength of the land.: Community perception of population on Etal Atoll. in V. Carroll (ed.), *Pacific Atoll Populations*. ASAO Monograph 3. Honolulu: East West center, University of Hawaii Press, Pp. 117-159.
- OPNAV (1944) Civil Affairs Handbook East Caroline Islands. ONAV P2-E. 21 February 1944. Washington, DC: Office of the Chief of Naval Operations, Navy Department.
- Robertson, Russell (1877) The Caroline Islands. *Transcations of the Asiatic Society of Japan* 5, 1876/77, 41-63.
- Spennemann, Dirk HR (2004) *Typhoons in Micronesia. A history of tropical cyclones and their effects until 1914.* Saipan, Commonwealth of the Northern Mariana Islands: Division of Historic Preservation.
- Spennemann, Dirk H.R. (2007) Edge of Empire. The German Period in the Mariana Islands 1899–1914. Albury, NSW: {retro|spect}..
- Treue, Wolfgang (1940) Der Erwerb und die Verwaltug der Marshall Inseln. Ein Beitrag zur Geschichte der Jaluit Gesellschaft. Unpublished PhD Thesis, Friedrich Wilhems Universität, Berlin.
- von Rummel, Walter Freiherr (1910) Häuser und Hütten in deutscher Südsee. Deutsche Kolonialzeitung 27 (32), 533-536.
- Yanaihara, T. (1940) Pacific Islands under Japanese Mandate. Oxford: Oxford University Press.