

Department of Pacific History,
11th March, 1959.

Captain Brett Hilder,
Edinburgh Road,
CASTLECRAGH, Sydney, N.S.W.

Dear Brett,

I keep waking up in the night in a bath of perspiration at the thought that I have not replied to more than one letter from you.

My trouble is that a University Committee is due to sit on me (almost literally) in a few months time and if the amount of academic paper produced does not meet with their approval I go out on my pink ear. If, on the other hand, it passes muster, I get a permanent appointment and everything in the garden should be lovely.

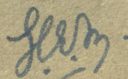
So I have had to drop all the pleasures of life as from the 1st January and just sit on my backside from morning to night writing. Life, to be perfectly truthful, is pretty grim at the moment, but I feel it is worthwhile making a supreme effort to try and land a job in which I have security to carry on writing history for some years to come.

Many thanks for the photographs of the Arorae stones. That article has the first priority as soon as this business of my future is settled and I can again tackle more or less what I want to. In the meantime I have collected a whole heap of material on it ready, and will show it to you when I can get away from here.

So please don't cut me off your visiting list until I'm confirmed here, after which I shall most certainly get in touch with you again. If I don't land it I am thinking of investing in a taxi plate; so I may have the pleasure of driving you around somewhere sometime in any case.

And enclosed is a little piece which may while away the odd half hour at sea.

Yours sincerely,



H.E. Maude.

M.V. "Tulagi"

bound Norfolk Is,

9 December 1958.

Dear Harry,

While in Somata recently, in the Solomons, I asked some Tikopeans about the "landmarks" that were used to direct canoe voyagers from Tikopea to Anuda or Cherry Island. They told me that the course was set by getting a mountain valley in line from the sea, and I had suspected something of that kind.

The Tikopian settlement at Somata is slowly growing, though it is rather a feeble affair compared with the Gilbertese settlement at Titiana near Gizo. I have just come across a good article on the Tikopians at Somata by the anthropologist James Spillius of Canada. The article is called "Polynesian Experiment; Tikopia Islanders as Plantation Labour" in "Progress", Autumn 1957. This is the Unilever journal, and I can get you a copy if you would like it, and cannot refer to it elsewhere.

Before I left Sydney Nancy Phelan rang me up and chewed my ear about my maiden book-review. Maybe it was rather too critical, considering how well the book was written, but I felt that it was too late to try to amend it. I hope the S.M.H. will see fit to print it in due course, and that the sales of the book are not affected adversely.

On the other side of the ledger, I trust that you were pleased with my Christmas Card: let me know if you would care for any spare copies, which could be printed larger if necessary.

With kindest regards to Mrs. Maude,

Yours sincerely,

Brett.

P.S. Enclosed are some home-made photographs of the Stones at Arorae; if you wanted one for publication it could be specially enlarged for reproduction. When last at Arorae I measured the distance from the stones to the sea; they are 220 yards from the NW tip of the island, 110 yards from the NE shore, and 95 yards from the western shore. This is rather what one might expect from the shape of the island, as it appears to be growing in a NW direction. The island is now 5.8 nautical miles long, or 35,090 feet. If it has grown at a rate of 1 foot a year, the Stones would have been on the foreshore about 1300 A.D., very very roughly.

m.v. "Tulagi" at Soraken,
Bougainville, TNG,
20 November 1958

Dear Harry,

My wife forwarded a letter from you on to me in the Gilberts, and I have now despaired of ever getting it. Hope it did not contain anything urgent, as it now appears to be a dead loss.

After the Gilberts trip I was asked to write a review of "Atoll Holiday" for the Sydney Morning Herald, a new form of literary work for me, but I enjoyed it, and would be glad to do some more. Your foreword was very good, both amusing and interesting, and gave a solid basis for the story. I haven't met Nancy Phelan yet, but I know her husband of PM Photos. Is it true that the new Editor of the "SMH" is your brother?

A letter has just reached me from Captain Clay, a Torres Strait Pilot, who is interested in the Arorae stones. He writes..." I wonder whether you have conducted any investigations into the well-known stones on Kiriwina in the Trobriands. Many years ago I had some correspondence with the then A.R.M. of the District on this subject, on which my memory is now very hazy. As I remember their use was more in the nature of an agricultural calendar to indicate the most favourable period of the year to plant certain food crops. Apparently they were of considerable antiquity, as it was said that the amplitudes of the stars to which they had been originally aligned had changed considerably in the period. If this should be correct it would indicate a much earlier settlement of these islands than is generally conceded. It would be interesting to hear your views on the subject."

I haven't heard of these stones before, and haven't any literature on the Trobriands. I Haven't even read Malinowski, but I believe that a man named Bellamy, a medical assistant, lived in the Trobriands both before and after Malinowski, writing lengthy reports during his years of service, which were interrupted by his going to the 1914-1918 war.

Any great change in the apparent declinations of the stars would require a long period, some thousands of years, as has been the case with the Egyptian pyramids, and it is necessary to know what stars were originally used before any calculations can be made. I will enquire from the Administration in Port Moresby, to see if they have any knowledge of the stones. In the meantime I should like to hear your news of Hawaii and your other Polynesian Researches.

On my recent visit to Arorae we measured the distance from the stones to the sea. They are about 100 yards from each side of the island, and over 200 from the western end. We also got some good photographs of the stones, much better than my previous efforts. You will be glad to hear that the Gilbertese at Gizo are settling down to a new way of life reasonably happily.

Sincere best wishes,

Brett Hill

2129 Kamehameha Avenue,
Honolulu 14, Hawaii,
25th August, 1958.

Capt. Brett Hilder,
Edinburgh Road,
CASTLECRAG, Sydney,
N.S.W., Australia.

Dear Brett,

Sorry not to have replied before to your letter re the 'Atibu ni Borau'; but you know what it is once one starts on one's travels: all correspondence gets shelved.

To quote from Bingham's Gilbertese Dictionary:-

Atibu, n. the general word for stone.

Borau, n. sailing; navigation.

N (or ni), prep. of.

So atibu ni borau means exactly what they are: "Navigation Stones".

I will look up the other references you mention when I get back to Australia and get a paper prepared for the JPS incorporating all we have found.

Honolulu is unbelievably rewarding on historical material connected with Hawaiian contacts with the South Seas. We have finished (more or less) the archives of Hawaii, the Bishop Museum, the Hawaiian Historical Society, the Mission Children's Society, but still have to deal with the Consular archives. I have concentrated on a few main themes, such as Guano; mission work and labour recruiting in the Gilberts; the 1820 Boki sandalwood expedition to the New Hebrides; the 1855 Hawaiian Protectorate over Sikiana;

the Manini beche-de-mer expedition to Wallis Island; and completing my bibliography on the Central Pacific.

I have been rather fortunate in finding material that fills one or two gaps in the early history of Fanning Island, notably as regards the American settlement in 1820, and now we have enough material for quite a respectable paper

on this very interesting atoll. Have you gleaned anything on your various trips there?

I suppose that Hawaii is today the most expensive place to live in that the world boasts, but we are managing on not much more than it would take in Australia; by dint of living largely on fruit and vegetables which we buy in the Supermarket and travelling only by bus. Lunches we eat at a corner drugstore for under half the price at a restaurant but when we feel wealthy we go to the W.W.C.A. and spend a dollar each at the cafeteria.

The historical material we are recording on microfilm, photostat and by dictating on to tape (which is a good way when one is in a hurry, though it means more work later on typing it

out). We have not long left now and there is still much to clear up.

Hoping that you had a successful recruit and calm seas throughout (the passengers at least don't like it rough),

Yours ever,

John

M.V.Tulagi;
Norfolk Island.

13 May 1958.

Dear Harry,

In regard to our Navigational Stones at Arorae, I should like to ask you, firstly, the meaning of the term "Atibu ni Borau", just for the record.

In the second place, I've been carefully going through Sharp's "Ancient Voyagers in the Pacific", and have two further references to the use of navigation marks, both similar to Williams reference of 1838. They are;-

p.44 & p.65, Captain Beechey R.N. in 1824 writes that the natives of Anaa set course "by landmarks" for the 170-mile leg to Maita on the route to Tahiti.

p.196, Raymond Firth, at Tikopia in 1929 and 1952 says that the voyagers to Anuta, 60 miles away, set their course by landmarks, waited for a favourable wind, & sailed by night using horizon stars as guides.

This gives us three islands on which to look for stones similar to those on Arorae, namely Atiu, Anaa & Tikopia.

In Sharp's book the ~~phrase~~ word "landmark" is used without variation in each case, as did Williams, but it is possible that the original writers, Beechey and Firth, may have been more explicit. I possess none of their works, and wonder if you could look them up before we publish our notes on the stones at Arorae.

I suspect that the stones were used as permanent standards of reference, and that beacons, flags or burning torches were used to actually give the course to canoes making their departure. These temporary marks would have been more obvious to Williams and other laymen than the stones. The constant use of the word "landmark" suggests to me that on Tikopea at least, this may refer to a departure bearing consisting of a stone or beacon on the beach in line with a mountain-top, or some other transit of remarkable objects. This would be much less likely on coral islands, for lack of distinctive cliffs, trees or mountains.

We are lying off Norfolk Island at the moment, with good weather, so we expect to depart to-night for the Hebrides, Solomons and Bougainville. After this I am to go back to the Malaita on the New Guinea run. The "Tulagi" is due to sail for the Gilberts recruiting trip on 31 July, if you are tempted to escape from Canberra. Oh I forgot that you are off across the Pacific in any case.

Bon voyage and Good Hunting. Sincerely,

Brett Hilder.

25th February, 1958.

Captain Brett Hilder,
183 Edinburgh Road,
CASTLECRAG, N.S.W.

Dear Brett,

I have been feeling terribly contrite for some time past at not having replied to your letter forwarding Captain Johnson's chart of Nukufetau.

What happened was that almost by accident I suddenly got interested in the Tahitian Pork Trade (1800-1830) and decided to write a short article on it - about 4,000 words. And before I realized what was happening I was deep in it and couldn't break free night or day for $2\frac{1}{2}$ months, by which time my little essay had risen to a paper of over 14,000 words and 7 appendices, including a complete list of ships arriving at Port Jackson from Tahiti during the period (with their tonnage, captains, owners and cargo). This alone took 3 weeks of searching through old newspapers and records.

But now thank goodness its finished - but it was terribly interesting to work at for the Tahiti pork trade was Australia's initial venture into foreign commerce (before sandalwood or pearl shell): the nursery in which the first island skippers (I have their names and quite a lot about some of them) sailed the first island schooners in the first island trade. And what a fund of knowledge captains like William Campbell amassed about the islands in those really early days.

I'm sure you'll agree that it was time someone sang about the contribution of the island captains to Pacific history, so feel hopeful that you will forgive my tardiness in writing.

I am now working once again on the Spanish discoveries and will of course send you a copy as soon as its published - also the paper on the saga of the 'Bounty' from the mutiny to the landing on Pitcairn, which is due to come out in the Journal of the Polynesian Society in June.

You may or may not remember now that I promised to send you a photostat of Captain Gilbert's account of his discoveries in the Gilberts and you very kindly agreed to see if you could

work out exactly what islands he did see.

When I came to see you I foolishly only brought Captain Marshall's account and this we soon found contained too few positions to enable us to make out his course with any degree of probability.

In the hope that you will still be willing to give your expert advice in this matter, I am now forwarding:-

- (i) Marshall's full account of his visit to the Gilberts in the 'Scarborough', taken from Phillip's 'Voyage to New South Wales;
- (ii) the two pages in Table IX of Phillip's Voyage which gives the relevant extracts from Marshall's log;
- (iii) Gilbert's full account of his visit in the 'Charlotte', taken from his 'Voyage to Canton' (this will give some good positions, I think);
- (iv) the plates from Gilbert's Voyage showing the islands in the Gilbert group sighted by him; and
- (v) a typed copy of my own amateur conclusions (for what they are worth - don't take them too seriously, even where I appear most definite: the less one knows, the more one is apt to dogmatize).

If you are still able and willing to let me know your findings I should be most grateful indeed - and it might serve to while away an hour or two when between islands on one of your trips. I should like to quote your conclusions as coming from you - as that would give a valuable touch of expert authority. The only paper I should be glad to have back again (in due course) is Gilbert's (iii) and (iv).

That reference on navigation marks - I came across what I think we were both looking for the other day, on pages 97 and 98 of the 1838 edition of Williams' 'Missionary Enterprises'. Williams is speaking to the chief Roma-tane of Atiu and asking him how to get to Rarotonga:-

"We had still one more island to seek; and, finding Roma-tane exceedingly intelligent, we inquired of him if he had ever heard of Rarotonga; 'Oh, yes;' he replied, 'it is only a day and a night's sail from Atiu; we know the way there.' This information delighted us; but when we inquired of him the position in which it lay, he at one time pointed in one

direction, and at another in quite the opposite. But this was soon explained; for the natives, in making their voyages, do not leave from any part of an island, as we do, but, invariably, have what may be called starting-points. At these places they have certain landmarks, by which they steer, until the stars become visible; and they generally contrive to set sail so as to get sight of their heavenly guides by the time their land-marks disappear. Knowing this, we determined to adopt the native plan, and steered our vessel round to the 'starting-point'. Having arrived there, the chief was desired to look to the land-marks, while the vessel was being turned gradually round; and when his marks on the shore ranged with each other, he cried out, 'That's it! that is it!' I looked immediately at the compass, and found the course to be S.W. by W.; and it proved to be as correct as if he had been an accomplished navigator."

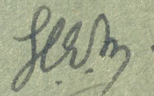
Admittedly this is Polynesia, but the Gilbertese gained much of their navigational lore from the Tonga-fiti immigrants from Samoa.

Would you be willing to let your article on the Arorae stones be published (under your name, of course), together with Captain Vic. Ward's effort? I could add a short forward or introduction and the whole should make a most interesting study for say the Polynesian Society Journal.

With many thanks for the Nukufetau chart and for all the help you have given me, not least over the Island of Jesus; I only hope I havn't given the straw that breaks the camel's back this time.

With kindest regards from us both,

Very sincerely yours,



M.V. Malaita

21 Oct. 1957

bound Port Moresby.

Dear Harry,

I have received a survey chart of the Atoll of NUKUFETAU and attach a redwood copy of it in case you have nothing better. It was sent to me by Captain Irving Johnson of "Yankee" who made the survey in 1943 in USS "SUMNER".

I am forced to agree that it fits almost perfectly to the descriptions given by Mendanae and his officers in 1568, as the Island of Jesus. Their latitudes were badly out in this case, which made me plumb for NUI previously, and I also find it very difficult to reconcile the bearings given & courses steered on the two days in question.

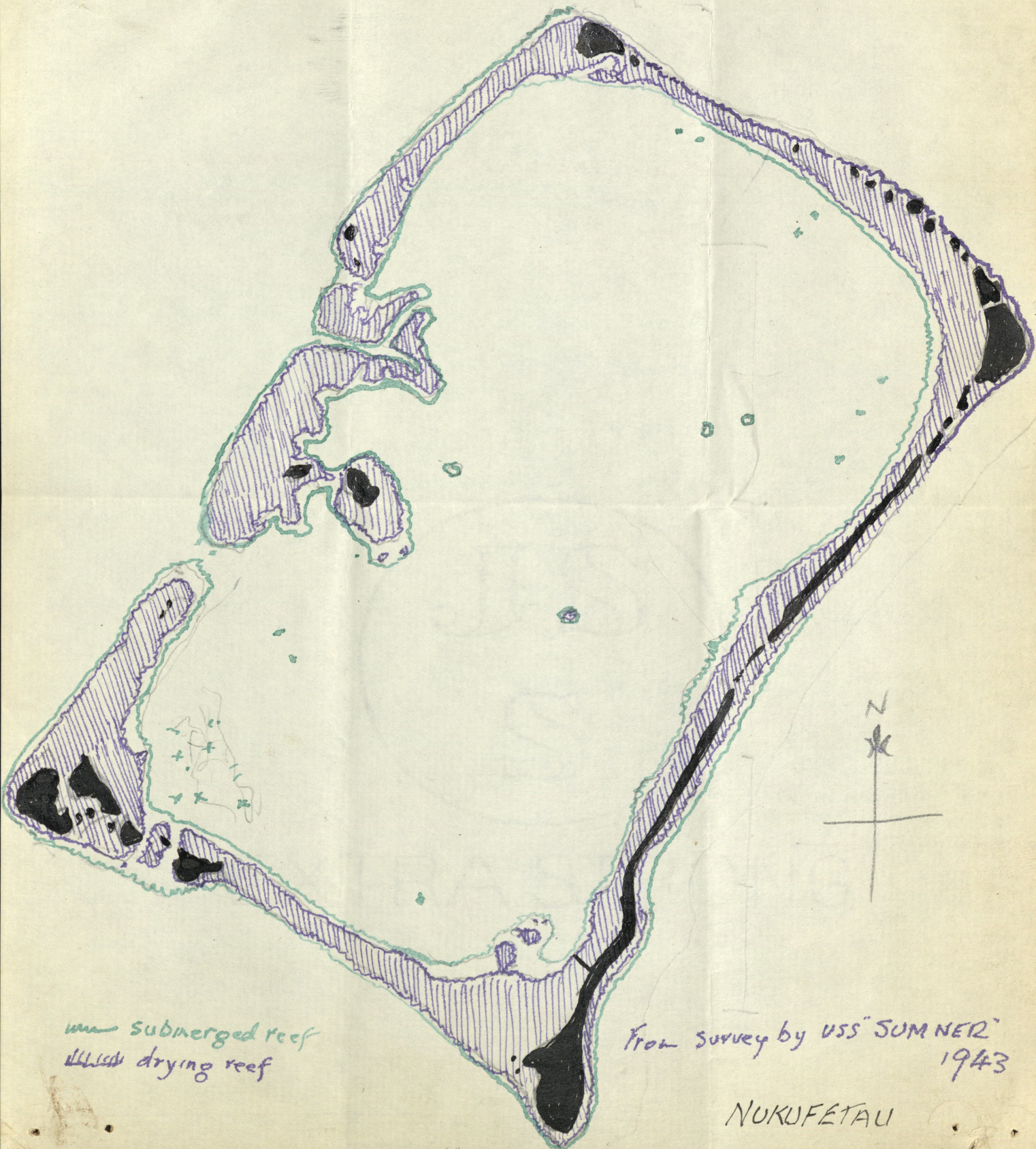
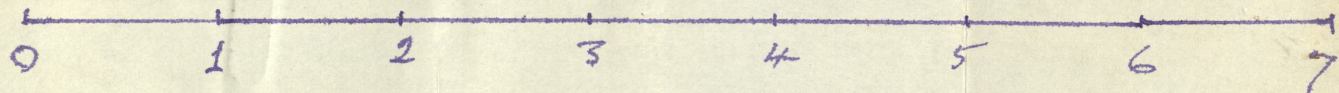
My typewriter lost one of its 9 lives yesterday by falling on its head, and it is still hors de combat, but expected to recover under shock treatment.

I recently surveyed a small group of islets off the west coast of Bougainville, & the Navy has given them the name "Hilder group" on the charts.

I hope you are progressing well on the writing up of the early discoverers, and am looking forward to seeing your work in print. With all best wishes, kindest regards to your wife —

Sincerely,
Nutt Hilder

Scale of Sea Miles



--- submerged reef
■■■■ drying reef

From survey by USS "SUMNER"
1943

NUKUFETAU

183 Edinburgh Road
Castlecrag NSW
8 July 1957

Dear Harry,

I'm sailing again tomorrow in the Tulagi
and expect to be back in Sydney on Friday the
16th August for 2 weeks.

Hope this will be a good chance
for us to get together over the navigations
of Capts. Gilbert & Marshall.

During my last trip to the Solomons
I met Irving Johnson with his brigantine "Yankee"
and he told me that he had made a survey
of Nukufetau in the Ellice Islands during
the war, & he promised to send me a copy
to study, in the matter of the Isle of Jesus.

I would very much like to read
your work on the Spanish voyages when it
is published in any form, and in the
meantime am looking forward to seeing you
in Sydney. My wife wants to know if it would
be possible for you to bring Honor with you
when you come to see us, as that would give
us very great pleasure.

Sincerely
Brett Hilder

Research School of Pacific Studies,
Australian National University,
Canberra, A.C.T., May 21st, 1957.

Captain Brett Hilder,
183 Edinburgh Road,
CASTLECRAG, N.S.W.

Dear Captain Hilder,

I was delighted to get your letter of the 13th, which unfortunately through some quirk of the post-office did not reach me until Saturday. The mails between Sydney and Canberra have been erratic in the extreme of late: I sent off a letter in March which took 6 weeks to be delivered to Angus and Robertson.

It was very good of you indeed to offer to devote a day to my navigational troubles: actually I feel sure that three hours will be sufficient, if I have everything ready. But though I have been trying for three days to arrange affairs so that I can make Sydney by the 24th, I find now it is quite impossible: and this in spite of my telling you that I could come down at any time.

The difficulty is that I have to go down on the 28th, for a fortnight but between now and then have a seminar (how I loath them), and my son and one other visitor coming up en route to Melbourne. It is also the last week of term; not that I pay a lot of attention to terms and vacations.

But no matter: I will work out all my conclusions both on the Spanish voyages (in the light of your very helpful observations) and that of Captains Gilbert and Marshall and have them typed out in draft ready for you when you come back from your next trip. That is, if you can manage to spare an hour or so sometime.

And thank you ever so for helping me over Buen Viaje and the Isle of Jesus. I am sure that you are right over the former but still not absolutely converted from Nukufetau for the latter, largely on account of its size. But I shall start my draft on the Spanish discoveries tomorrow and go over everything with a fine tooth comb.

Your notes on the Arorae stones are most interesting. I think myself that your last surmise is correct, i.e. that the stones are used in conjunction with stellar navigation. The Gilbertese navigated principally by the stars, though they also used such aids as the loom on the horizon, birds, the set of

the waves, cloud formations, and a miscellaneous collection of phenomena known as "betia" or sea-marks.

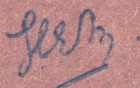
An examination of Gilbertese navigational practices might give you the clue as to how the stars could fit into the picture. All we know is set out in two articles by Grimble:-

- (i) "Canoes in the Gilbert Islands", Journal of the Royal Anthropological Institute, vol.LIV, Jan.-June, 1924.
- (ii) "Gilbertese Astronomy and astronomical observances", Journal of the Polynesian Society, vol.40, No.4, Dec., 1931.

I have just been writing on Mandana's first voyage through the Central Pacific, in which he discovered San Barnado and La Solitaria. The identifications of these islands seem to work out so neatly that I have got quite excited. It is astonishing that no-one should have attempted to identify the intermediate islands sighted by the Spanish explorers when en route to their main discoveries in Melanesia: actually there have been a few careless attempts, but nothing detailed. But probably local knowledge helps a lot in this kind of game.

Looking forward to seeing you when you next return from the islands, which I fear I shall never see again: only write about.

Yours sincerely,



H.E. Maude.

98 Arthur Circle,
Forrest, A.C.T.,
7th April, 1958.

Dear Captain Hilder,

I was most interested to get your letter the other day on the "Atibu ni Borau" at Arorae.

I first saw them about 1933, I think, but beyond making a note that they existed I could do nothing, lacking the navigational knowledge.

Then late last year I was sent a ms. article on them by Captain Vic Ward, of the "Tungaru" or "Tuvalu" (in my time of the "John Williams"), whom you may know.

This article is a page and a half of foolscap, single-spaced, with a carefully worked out plan showing the lay-out of the stones, their compass bearings and the islands they are supposed to relate to. There is a photo of the Rev. Eastman standing by one of the stones.

I see that Vic calls them the:-

- (1) Beru stone;
- (2) Nikunau stone;
- (3) Banaba stone;
- (4) Onotoa stone;
- (5) Orona (Phoenix Islands) stone;
- (6) said to be Tamana stone; and
- (7) no known name, possibly Solomon Islands, stone.

Personally I think some of his conjectural directions, e.g. Orona and the Solomon Islands, are a bit hard to swallow.

I have kept the ms. too long already (it was sent to me to arrange for publication) partly because I wanted to check through the literature on the Gilberts to see if I could find any mention. But there is none, so I was about to send it off to the Journal of the Polynesian Society when your letter arrived.

If you like I will bring it down to Sydney on my next visit and we can discuss whether his article makes your projected one superfluous; whether you would still like to write a separate one; or whether (as I rather hope) you decide that it would be best to write a second part to Vic's effort, under your own name, giving your conclusions and stating where and why they differ from his. I must say that I cannot agree with several of his statements.

Being an old island hand myself I should think that much would

depend on your personal relations with Vic: he is apt to have decided opinions and to be a bit explosive at times - though one of the salt of the earth.

Curiously enough I was on the point of ringing you when last in Sydney, and then reflected that you would probably be away or, if not, busy. For to be frank I need your professional assistance on no less than three matters:-

- (i) the identification of the island of Buen Viaje, discovered by Quiros in 1606;
- (ii) the identification of the Island of Jesus, discovered by Mendana in 1568; and
- (iii) the route taken by Cpts. Gilbert and Marshall through the Gilberts in 1788.

I should explain that I am engaged in writing a History of the Central Pacific and this is all needed for the chapter dealing with the discoveries. Needless to say any help would be given full acknowledgement in the text and the Introduction.

In the hope that it will stimulate your interest I am enclosing a few notes containing all the relevant information on the first two points. The third is so complicated that I really think the only thing for me to do would be to come down from Canberra with the journals of Gilbert and Marshall, charts and supporting material and have a session with you. I reckon it would take about three hours to sort out what islands they really did discover: I could come almost any time you are in port.

I realize that from a busy man like you I am asking rather a lot; on the other hand, I have a feeling that you are as interested in such obscure questions as I am.

With kind regards to you both,

Yours sincerely,

SLM

183 Edinburgh Rd
Castlecrag
XL 2677

13 May 1957

Dear Mr. Maude

Thank you very much for your letter of 7.4.57.

I have written to Harold Gatty at Fiji to see if he knows of any similar stories in the Soufriere, but have no reply as yet.

I also consulted the volumes of the U.S. Exploring Expedition of 1840-1842, but could find no reference there. I am enclosing my notes on the stories & the plan & section of chart. There should certainly be a reference made to them in the Journal of the Poly. Society, and it might be a good idea if you added your comments to the Ward's paper for publication. You could use my notes as much as you wish. My object in making the notes was to put them on record for the Institute of Navigation, but it would be best if I waited until we were sure that no further information could be found. Perhaps I could put a note on them in the P.I.M., and we might get some useful replies or comments to that or to the Polynesian Journal.

My photos are rather poor, as I got some light on the film from a red lamp when I developed the film.

In regard to your three problems, I have studied the Buen Viaje & Island of Jesus notes, and from the references & quotations given, would say that Buen Viaje was Butaritari proper and that Quiros passed S. & E. of it. Island of Jesus appears to be Nui (Netherlands Id.) at first glance.

My only reservations are two in number. Firstly, I have seen none of the notes in question myself, neither Butaritari nor the Ellice Group. Secondly, I should like to be sure that the Noon latitudes, day's runs & other items are all correctly dated relative to each other.

Most navigators started their day at noon, so that the afternoon was likely to be referred to as a different date to the forenoon.

(This was further aggravated by the Astronomical Day being counted from Noon to Noon at Greenwich, up to the year 1925, when GMT started the day off at ~~the~~ Midnight.)

Generally the translators & editors of the journals have adjusted the dates to civil usage, midnight to midnight, but this could lead to ambiguities in the different accounts.

The dead reckoning of Quiros before discovering Buen Viaje seems to account for less latitude than his noon sights, which might be somewhat clarified by the records for the succeeding day's runs.

If Bruer Viage was really sighted somewhere ahead in the afternoon, it must have been Butaritari proper, and it seems most likely as the latitude of the island is given as North of the ship's lat.

There is just a slight chance that the island of Bukata was sighted on the Starboard bow ^{or ahead} and passed at a safe distance northwards, as Bernadine says it was not convenient to go closer, which probably meant that it was to windward, or SE, in spite of the reference to winds S to SW during the preceding period.

In regard to the Island of Jesus, only Niufits fits the description of virtually 3 islets, two main ones with a group of trees between. This reminds me of the early chart of Nihunaa made by the U.S.N., though in this case there is now a continuous line of vegetation there.

In regard to the tracks of Gilbert & Marshall, I have never read their journals, but expect that their navigation would be much easier to follow because it is more modern. I would be glad to spend a day with you on the problem either at my house or yours in Sydney. I expect to be home until Friday the 24th May, and you might be able to ring me at home in the next few days to make a date. I have as yet no engagements, so any day would suit me.

Yours sincerely,
Brett Hilda

183 Edinburgh Road
Castlecrag NSW

29 March 1957

Dear Mr. Maude

Our 'last trip in the "Tulagi" took us recruiting through the Gilberts and on to the Line Islands.

We called at the Southern Gilberts, Tamana, Arorae, Nukunau, Onotoa & Tabiteuea.

At Arorae I went to the northern extremity of the island to see a series of coral stones erected to point to the neighbouring islands - I took a boat-companion with me to measure the bearings accurately, & found that the stones pointed to the windward sides of Tamana, Onotoa & Nukunau, except for one stone which pointed nowhere at all. It may have been used to send unwanted people on a wild goose chase!

The stones gave the directions so accurately that I suspect they may have been erected after the advent of European ships & companies, but the locals had no idea of their age. I should put the age at between 100 & 1000 years.

Today at the Mitchell Library I went through the volume of the US Exploring Expedition of 1840 - but found no reference at all to the stones, although there had been some European contacts for some years before that.

I have a dim recollection of hearing or reading about some similar stones, but can't remember how or where. Of course Prince Henry the Navigator had a whole compass-rose laid out at his navigation school on Sagres headland on Portugal, about the year 1500. I've seen recent photographs of the ruins of Sagres Nautical Academy, but don't know whether there were any stones pointing to special landfalls.

I took some photos of the Moeres at Arorua, & made a plan of their disposition. I might write a note on them for the Institute of Navigation, and thought that you might have some historical knowledge of the Moeres, either from your personal experience or from your extensive reading of books on the Gilberts.

I believe your wife is going to be in Sydney for a few days, and I may ring her before I post this letter off to you. You'll be interested to know that the Gilbertese settlement near Gizo is progressing very favourably, as indeed it should, and I hope it will be a happy experiment.

With all best wishes

from Brett Hilder

NAVIGATIONAL STONES ON ARORAE ISLAND

On the extreme N.W. tip of Arorae is a deserted village used by the natives of Tamaroa village as a holiday resort for their annual period of recreation. This tip of the island faces the nearest islands to Arorae, and directional stones mark the courses to take to enable sailing canoes to navigate to these neighbouring islands. It has not been possible to get any references, so far, as to the antiquity of these stones, and their age as navigational aids may be anything between 100 and 1000 years.

The direction of the stones was measured by a magnetic compass, then corrected for the local Variation of 10° East, and given as true bearings. There are eight stones in all, four of them being set up as parallel pairs, another two separate ones both being set on a similar heading, and the other two are single pointers. The stones therefore point in 5 different directions, of which only two were known by the old native who acted as our guide. He said that the two separate stones pointed to Tamana, the nearest island, just 50 miles away. The largest and most pretentious pair showed the way to Nikunau, 75 miles away. One of the single stones appears to point to Onotoa, 85 miles away, and the smaller pair of stones seemed intended to direct the navigator to Tamana in a different season to the two separate stones. The last stone is actually under the roof of the village meeting-house, but as there are no walls, the stone still points out to sea. The direction of this stone is North East, leading over the trackless ocean for 2040 miles to the islands of Hawaii. In the opposite direction lies the Santa Cruz Group, 750 miles to the South-West.

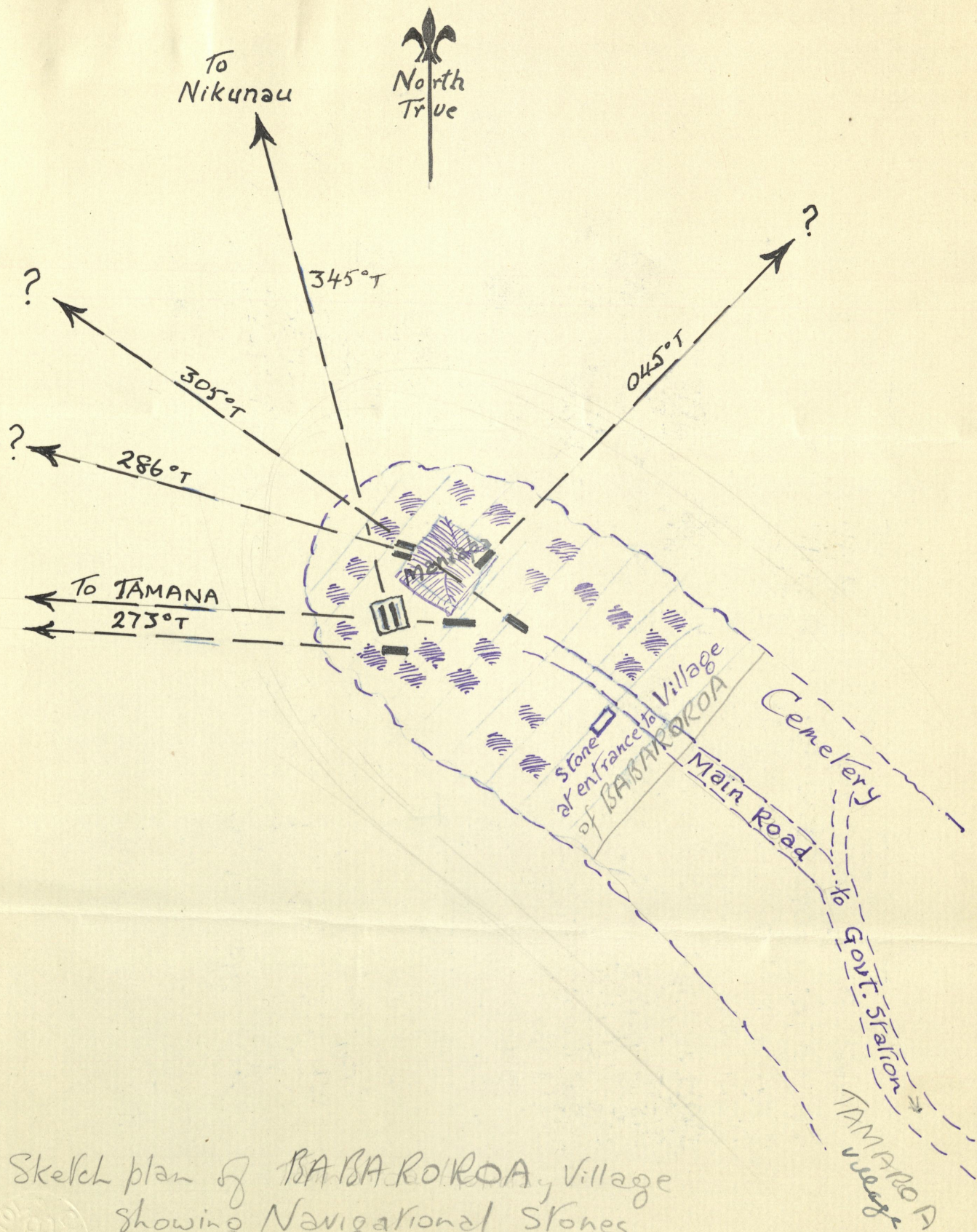
These stones may represent the site of a School of Polynesian Navigation on the peninsula, similar to that of Prince Henry the Navigator on the headland of Sagres in Portugal about 1500 A.D., and this may be the date of the erection of the stones.

There are several questions to be answered before any real conclusions can be drawn. Are the directions of the stones the true directions of the islands, or do they give courses to allow for a prevailing wind and current? Before we can answer this question we must observe that the positions of these islands are still in doubt. Arorae is reported to lie 3 miles to the westward of the charted position, and Nikunau 3 miles to the North-East. If these reports are correct, they would change the course to steer by 6 degrees of the compass. The prevailing winds are East-South-East in the South-East Season, and West-Nor-West in the North-West Monsoon, and the currents tend to follow the drift to the W-N-W most of the year.

It is possible that the stones were placed in position after the coming of the Europeans, possibly in 1841 when most of the charting of the Gilbert Islands was done by an American squadron.

It is noticeable that the stones are not arranged in a group to show the correct relative positions of all the islands, as on a chart, or as done in the string maps of the Marshall Islands, 900 miles to the Northward.

It is difficult to see how the stones could be used, unless their direction relative to the wind at the time was noted, or their direction relative to the changing bearings of the stars or sun. This could be studied for several days or nights before setting out on an expedition.



Sketch plan of BARBAROROA, Village
 showing Navigational Stones
 on N.W. point of ARORAE,
 Gilbert Islands.

7.2.1957



Main pair of stones; pointing 345° True to NIKUNAU



Large stone pointing 305° True to ONOTOA



Small pair of stones pointing 286° True to TAMANA



One of two stones pointing 273° True to TAMANA

Captain Brett Hilder,
183 Edinburgh Road,
Castlecrag, N.S.W.
8 April 1957.

(Copy)

Dear Mr. Gatty,

We were recently in the Gilbert Islands doing some recruiting for the plantations in the Line Islands, and we spent a day at ARORAE, the southernmost island in the Gilberts.

My attention was directed to a series of coral stones erected near the NW extremity of the island, at a date unknown. These stones were said to point to some of the other islands, 50, 80 and 100 miles away. The local natives told me which stones pointed to named islands, but in some cases they did not know where the stones pointed to.

After taking careful bearings with a boat compass of each stone, I plotted them on the chart and found that they were surprisingly correct. Each bearing, as shown on the enclosed copy pointed to within 5 degrees of an island, generally on the windward side, possibly to allow for leeway or current.

Some of the stones were in pairs, but one of the single stones pointed to no neighbouring island, perhaps to send off men whom they didn't wish to see again.

I have a faint recollection of reading or hearing about some similar set of Directional or Navigational Stones, but the nearest similarity I can name is that of the grounds of the Sagres school of navigation set up by Prince Henry the Navigator of Portugal about 1500 A.D., where the stones indicated the points of the compass.

I suspect that the stones at Arorae may have been set up after the advent of Europeans and magnetic compasses, but the locals have no knowledge or tradition of their age. We can therefore set the date of erection as somewhere between 100 and 1000 years. It is difficult to see quite how the stones would be used, as they would be impossible to see from seaward, unless a line of marks was erected, to be kept in line astern until out of sight.

Can you give me any advice of similar sets of stones or their use in the Pacific, from your extensive study of navigation? No one in the Gilberts could give me any information on the matter.

We have been hoping through the years to get you to speak to the Australian Institute of Navigation in Sydney. Would you be interested in becoming an Honorary Member? It would give me great pleasure to propose your name.

Yours sincerely,

From this Anch^r the left or West extreme of Bery I bears 342° (N 27° W Mag) the right or S.E. extreme 114° (S 76° E Mag)

Espiegle Anch^r (see plan)

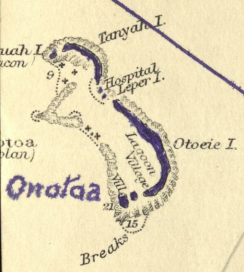
Bery (see plan)

Hospital

Nukunau

Rep^d to lie 3 miles to N.E. of charted position (1926)

S M I L L G R O U P



305° T

345° True

286° T

273° T

Tamana

Tamara

Nanimona

Reported to lie about 5 miles further west.

045° T → Hawaii 2040 miles
← Santa Cruz 750 miles

Southern Gilbert Islands
Directions from Navigational Stones
on Arorae for native sailing canoes.

176° East

S 3°