O. Riches.

SPECIAL RECORD

OF THE

PROCEEDINGS

OF THE

GEOGRAPHICAL SOCIETY

OF AUSTRALASIA,

IN FITTING OUT AND STARTING

The Exploratory Expedition to New Guinea.

JULY, 1885.

COMPILED BY EDWARD PULSFORD,
SECRETARY OF THE SOCIETY,
SYDNEY.

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SPECIAL RECORD

OF THE ARRANGEMENTS FOR

THE EXPLORATION OF NEW GUINEA.

GENERAL STATEMENT.

THE interesting and important character of the exploratory work undertaken by the Geographical Society of Australasia makes it desirable that the public should, at the earliest possible moment, be put in possession of full details of the Society's operations; and, moreover, remembering that these operations are sustained almost wholly by funds contributed by various Colonial Governments, the Society considers it to become a duty that this should be done. That, in the very infancy of the Society, £4000 of public monies should be entrusted to it, is a noteworthy fact, and one that imposes the responsibility of proving that the honour thus signally bestowed is not altogether unmerited.

Considering the great size of the Island of New Guinea, and that its natural resources are generally believed to be very important, it is strange that so little has hitherto been done to discover and to open to the world the secrets of the interior. Of the coast line much is known, but the interior is to us still almost a blank; of the people, the flora, the fauna, the geology, the climate, and the great geographical features therein, we know nothing with even an approach to accuracy. It therefore would have been most strange if exploration in New Guinea had not been one of the very first things to attract the attention and the energies of the newly-formed society. For the purposes of this particular record it is unnecessary to recount the steps taken in 1883 and 1884. We will begin with January of the present year.

At that time a committee, afterwards called the Exploratory Committee, had been appointed by the Administrative Council. Victoria and New South Wales had each voted £1000, and the latter colony had voted a further £1000, conditionally on other colonies contributing: the Australasian Geographical Conference had just met in Melbourne, and had discussed and approved the proposal for the exploration of New Guinea.

The Exploratory Committee held its first meeting on the 15th January; it numbered eight members, specially appointed, viz.—

T. B. Belgrave, Esq., M.D.
Lieut. E. R. Connor, R.N.
Captain H. C. Everill
Lawrence Hargrave, Esq.
John F. Mann, Esq.
E. Marin La Meslèe, Esq., Hon. Secretary
C. S. Wilkinson, Esq., Government Geologist
Harrie Wood, Esq., J.P., Under-Secretary for Mines

The President of the Administrative Council, Sir Edward Strickland, K.C.B.; F. Gerard, Esq., Treasurer; and J. H. Maiden, Esq, Hon. Secretary; being also members ex-officio.

Mr. Hargrave has considerable personal knowledge of New Guinea, having accompanied D'Albertis in his expedition up the Fly River in 1876; and Mr. Mann is a well known explorer, having been Dr. Leichhardt's second in command. Mr. Harrie Wood was appointed Chairman of the Committee. The Committee has met twenty-three times; and, during the same period, the Administrative Council has met seventeen times; making a total of forty meetings which have been devoted almost wholly to arrangements for the exploration of New Guinea.

The resolution appointing the Committee conferred considerable executive power upon it, but the Committee did not act on its authority, preferring to submit the results of its deliberations, in the shape of recommendations, to the Administrative Council. This method, of course, added largely to the amount of work, but it ensured greater consideration being given to all proposals. During the last month of the preparations for the Expedition the Council met at the close of the meetings of the Committee, and delay was thus saved; the resolutions of the Committee being considered forthwith.

It proved a fortunate circumstance for the Society that the Rev. W. G. Lawes was spending some months in Sydney. His

great experience of New Guinea, his high personal character, and the esteem in which he was known to be held by the natives pointed him out as a man who could give advice and information of more than ordinary value with reference to schemes for exploring that Island. He was therefore on January 19th, elected by the Council a member of the Exploratory Committee. He attended many of its meetings, and when, in April, the time arrived for his return to New Guinea, to complete the indebtedness of the Society to him, he kindly undertook to act as its agent and official representative in carrying out the business details of the arrangement whereby the Society undertook to assist Mr. H. O. Forbes in his exploration of the Owen Stanley range of mountains, full details of which arrangement will be found elsewhere. Captain Everill resigned his position as a member of the Committee after the ninth meeting, he having then become an active candidate for the position of Leader of the Expedition.

In February, the work of the Society having become very heavy, it was decided by the Administrative Council to advertise for a Secretary at the salary of £300 per annum, a considerable number of applications were received, and from amongst them that of the compiler of these pages obtained the preference.

Considering the fact that nearly every member of both the Administrative Council and the Exploratory Committee is fully occupied with either the cares of professional life or the active duties of the Government service, and also that the Expedition was the first undertaken by the Society, it is thought that the public of these Colonies will not be dissatisfied with the work that has been done. It can be safely said that no appointment, purchase, or arrangement for, or in connection with, the Expedition is due to favor; fitness for the work has alone been considered.

With a view to facilitate the work of preparing the Expedition, the following sub-committees were formed:

Steam Launch Sub-Committee:

John F. Mann, Esq.
Lieut. E. R. Connor, R.N.

General Stores Sub-Committee:

Law. Hargrave, Esq.
Dr. Belgrave.
John F. Mann, Esq.
Lieut. E. R. Connor, R.N.

Scientific Instruments Sub-Committee:

C. S. Wilkinson, Esq.
Lieut. E. R. Connor, R.N.

Medical Stores Sub-Committee:

Dr. Belgrave.

Instructions Sub-Committee:

E. Du Faur, Esq.
Dr. Belgrave.
C. S. Wilkinson, Esq.

Much time was occupied in the selection of a steam launch. Messrs. Burns, Philp & Co. (Ld.) offered to supply at Thursday Island, a steam launch of very light draught for river exploration, and also a small schooner to serve as a base of operations. The advantages of the proposal, especially as the vessels were to be provided at Thursday Island instead of at Sydney, were very great; but as a larger and more powerful steamer, to be selected in Sydney, was considered preferable, the A.S.N. Co's. steamer "Bonito," 77 tons gross register, was eventually chartered for the period of six months; the charter money being at the rate of £50 per month—the Society also paying insurance on £1,500 at the rate of 10 per cent. for the six months. In connection with this charter the warm thanks of the Society are due to Captain Hixson, President of the Marine Board, and to his Surveyors for their great care in examining the vessel and seeing that she was well fitted out for sea. The "Bonito" is a very handy, commodious vessel, and of fairly light draught of water. On the way from Sydney to Brisbane she met bad weather and came through it entirely to the satisfaction of the party.

It has been the aim of the Council and the Committee to subject their arrangements to the approval of His Excellency the High Commissioner for New Guinea, and of the Admiral commanding on this station, and the plans of the Council as finally arranged were submitted to them and sanctioned. In February, His Excellency kindly offered to take the party to New Guinea in the "Wolverine" which vessel the New South Wales Government had agreed to place at his disposal: the political complications which arose, however, compelled that Government to retain the "Wolverine" and the Council had to make its own arrangements on this point. His Excellency has made a personal subscription of £5 to the Exploration Fund, and has

honoured the Society by becoming a member of it. His Excellency has stated that when the time comes for a second expedition he will probably be able, in his official position, to give help in a variety of ways.

The work of preparing the Instructions for the Expedition entailed a great deal of labour. The various members of the Committee were, in the first instance, each asked to send in a memorandum of items which they might think should be included in the Instructions: the same request was also made to the Victorian branch: after this was done the Instructions Sub-Committee, already referred to, was appointed, and the memoranda were referred to it. The result of the Sub-Committee's work was considered by both the Exploratory Committee and the Administrative Council, and finally referred back to the Sub-Committee and completed by them.

Whilst every care was taken to make the position of the Leader supreme, the scientific character of the Expedition was duly considered, and a certain amount of power given to the scientific staff.

In the preparation of the Instructions for the scientific staff much valuable assistance was rendered by Mr. E. P. Ramsay, the Curator of the Australian Museum, Sydney.

The Instructions were printed in pamphlet form and a copy was given to every member of the Expedition.

In accordance with the wish of the Council and the Leader himself, the Expedition took no wines or spirits, beyond small quantities to be dispensed by the surgeon as medical comforts.

It was represented to the Trustees of the Australian Museum (Sydney) that most of the New South Wales' share of the specimens obtained in New Guinea would be presented to that Institution, and that consequently the Society would be glad if they would help to prepare the stores required by the scientific staff for the preservation &c. of specimens. The Trustees readily responded, and they presented the expedition with many articles of service to that staff.

At a meeting of the Administrative Council held July 9th, the following resolution was passed: "That the Vice-President, (Sir Edward Strickland) be requested to convey to the Hon. J. Douglas (Government Resident at Thursday Island) and Robert J. Gray, Esq. (Under-Colonial Secretary, Brisbane), the thanks of the Administrative Council for the very valuable assistance they have rendered to the New Guinea Exploring Expedition."

THE PART OF NEW GUINEA TO BE EXPLORED.

THIS question required and received the greatest consideration. The expedition of this year was at first intended to be merely preliminary to more important operations next year; and at a meeting of the Committee on February 9th it was resolved to restrict the operations to exploring the Aird or some other river on the south coast. However, more ambitious projects were soon brought forward, and it was proposed to explore the rivers in the south of the island and also some portion of the interior. The proposals were discussed with Melbourne by letter, but the progress in this way was too slow, and it was therefore suggested that a telegraphic conference should take place between the Councils of the two branches. The telegraph authorities in both Melbourne and Sydney gave their consent to the free use of a wire between the two capitals, and on the evening of March 31st the Council of the Victorian branch assembled at the Central Telegraph Office, Melbourne, and were put into communication with the Council of the New South Wales branch at the General Post Office, Sydney. The Conference was begun by the transmission of the following message to Melbourne:—"The Vice-President and Council of the New South Wales branch of the Society send their kindest greetings to their brother geographers in Victoria, and hope that the Conference of this evening will result in arrangements that will greatly increase the fund of general knowledge; and will at the same time place the Geographical Society of Australasia in a strong and prominent position." To this almost instantly came the reply—"We return our best greeting to our brethren of the Sydney branch, trusting that this evening's deliberations will lead to final arrangements for grand discoveries through the Geographical Society of Australasia." The business of the evening, thus courteously opened, proceeded very satisfactorily: final arrangements were completed with reference to Mr. Forbes: and with regard to the Society's expedition, Sydney suggested that it was desirable to at once make a bold effort to get to the centre of New Guinea, not only because of the greater probable results, but because of the necessity for securing substantial public sympathy in the Society's work; and the proposal of the Exploratory Committee was submitted, which was for an expedition up the Aird River: thence

inland; and that the inland exploration start from the first high land met with up the river, shown on the map as Aird Hill. The proposal was considered in Melbourne for about two hours, during which time the telegraph was frequently used to ask and answer questions on many matters of detail. Ultimately the message came from Melbourne, "We fall in with your wishes regarding Aird River Expedition."

This satisfactory termination of the conference left matters apparently in a very straightforward condition, but trouble was still to be met. It soon became clear that the funds contributed were not sufficient to despatch the expedition with two distinct parties under separate leaders, one for high land, and one for riparian exploration, and it was finally decided that the high land exploration should take precedence of the riparian. It was well known that the south-east monsoon made it a rather difficult task to enter the Aird River during the winter, and a telegram from Thursday Island, kindly handed to the Society by Messrs. Burns, Philp and Co., emphasised this, and drew attention to some good rivers to the Eastward of the Aird; consequently, when the expedition was ready, the Leader received instructions, that if he found the route by the Aird River impracticable, he was to choose the first available estuary to the Eastward thereof: and with those instructions the expedition sailed. Unfortunately, at the very last moment, when the expedition was nearing Thursday Island, it became imperative to issue instructions which must alter and affect the whole expedition. Telegrams were received from Robert J. Gray, Esq., the Under-Colonial Secretary of Queensland, stating that Captain Williams, of the Queensland Government steamer "Advance," which vessel was to convoy the expedition, had asserted that an entrance to the Aird was, at this time of the year, not only difficult but exceedingly dangerous; and that, indeed, it was not safe for the Bonito to cross the Gulf of Papua. At the time when this information was received the expedition had left Cooktown, the last point of telegraphic communication in Queensland. Mr. Gray, however, detained the "Advance" there, till the matter could be considered, A meeting of all those members of both Council and Committee who could be got together, was at once held, and the matter thoroughly debated. Much regret was expressed at the necessity that had arisen to alter the instructions given before the expedition sailed, and a resolution was passed on the subject.

The following telegram was sent to Mr. Gray.

"Much obliged for your second telegram. Will you kindly forward the following message to Captain Williams, to be handed

by him to Captain Everill at Thursday Island.—'The Council request that you do not cross the Gulf of Papua, or run any risk in attempting the Aird. Consult with Captain Williams, and other competent authorities, as to best route to reach high lands in interior of New Guinea. Proceed if possible by course suggested by Mr. Hargrave, or via Baxter River.'"

It will be perceived that the Council has, under altered circumstances, still aimed at the exploration of the high lands, rather than the low lands, or the river system of New Guinea. It may be that the expedition will discover some inland waterway by which, after all, to reach the neighbourhood of the Aird, which is thought to be the best starting point for reaching the mountains.

THE POSITION OF LEADER.

THE importance of this appointment was strongly felt, and there was a general belief that the Rev. James Chalmers was by far the most suitable man who could be chosen for the position. In the course of a discussion on the subject the Rev. W. G. Lawes said that he himself could not undertake exploratory work, as he was not strong enough; but he stated that his colleague, Mr. Chalmers, was admirably suited for it by reason of his great physical powers. It was, therefore, a severe disappointment to find that Mr. Chalmers could not undertake such work this year, as, after an absence of nineteen years, he had arranged to visit England. A positive offer of the leadership was made to him when he was at Cooktown, but he replied by wire on February 2nd: "Thanks for honour conferred, but cannot at present accept." In a letter from New Guinea, dated February 12th, Mr. Chalmers wrote: "I hope, on my return, to carry through several journies I have long planned, and if then I could be of service to your Society, I might arrange accordingly." In reply to his letter Mr. Chalmers was told that the Society would be glad to have some information about his proposed journies, and would be glad to help him in carrying out his plans if it were possible. It is quite likely, therefore, that in the course of a little time Mr. Chalmers may be assisting the Society in the work of exploration.

Having failed to enlist this gentleman for present service, the idea was entertained of having what would have been practically a double expedition, viz., one party to be landed to push its way to explore the mountains, and to be under a scientific leader; the other party, under a nautical leader, to remain on board the steamer and undertake a riparian exploration. This full and tempting scheme had to be abandoned, as it was found that it would not come within the compass of the Society's funds; and negotiations which had been opened with two gentlemen were closed. It was decided, on April 10th, to invite applications for the position of leader, by advertisements inserted in the leading papers of Queensland, New South Wales, Victoria, and South Australia, applications being invited also at the same time for the various other positions on the Expedition. The applications for the office of Leader were considered on May 4th by the Exploratory Committee, who selected the names of three gentlemen, all of them captains fully certificated, for the consideration of the Administrative Council. They also recommended that the leadership should be entrusted to a gentleman acquainted with navigation. This recommendation was adopted by the Council, and out of the three selected applicants Captain Henry Charles Everill was finally chosen as Leader; the resolution appointing him being moved by Sir Edward Strickland, K.C.B., and seconded by the Hon. W. A. Brodribb, M.L.C.

Henry Charles Everill, who has been placed in this important position, is thirty-eight years of age. His certificates as master are of the highest class given, and he has lately been employed by the Technical Board as teacher of navigation. He has travelled a great deal, was three years a tobacco planter in Sumatra, has practical knowledge of exploration in tropical swamps and jungles, and is able to speak the Malay language fluently. He, therefore, possesses many admirable qualifications for the post of Leader.

THE SCIENTIFIC STAFF, OFFICERS, ETC.

THE Society has very good cause for congratulation on the secondary appointments; as far as it has been possible to ascertain the selection that has been made is exceedingly good, and completely justifies the policy of advertising for applicants over the wide area previously named. The Committee had nearly two hundred applications from which to make choice, and the task of going through the whole of them proved a very arduous one: still, for some of the positions, none of the applications were satisfactory, and other steps had to be taken to find suitable men; happily, the Committee finally succeeded in obtaining a good man for every position. Many of the applicants were most enthusiastic in the matter, and some of them were quite willing to go without the slightest payment. The principle was, however, decided upon, that no volunteers should be taken, but that salaries should be paid in every case so as to constitute every one employed on the Expedition a servant of the Society. However, the available funds being so limited, it was impossible to be very generous in the matter of salaries, and it is not to be concluded that the figures given represent the merit of the recipients.

In the selection, consideration was given to the desirability of having as many colonies represented as possible, and there is good reason for satisfaction with what has been achieved on this point.

The Melbourne Branch of the Society, especially the Vice-President, Baron F. von Mueller, K.C.M.G., rendered invaluable aid in the selection of the scientific staff.

We will briefly go through the list of appointments.

J. W. Haacke, Ph.D., age 30, of Adelaide, is the chief scientist of the Exhibition, with Zoology as his speciality. He has filled the posts of first assistant at the Zoological Institute of the University of Jena; and first assistant at the Zoological Institute of the University of Kiel, both in Germany. In New Zealand he has worked for Professor Parker at the Otago Museum, Dunedin; and for Dr. Haast, at the Canterbury Museum, Christchurch. In 1882 he was appointed Curator of the Adelaide Museum. His range of scientific knowledge is very considerable, and his reports may be expected to be of real value.

Sidney A. Bernays, M.D., age 32, of Melbourne, is the surgeon of the Expedition, for which position he is undoubtedly a most competent man. He is, moreover, a scientist of no mean ability. He is at home in geology, but botany is his speciality, and this department of the Expedition has been put under his care.

Godfrey Hemsworth, age 28, of Brisbane, fills the post of nautical sub-leader, and in the event of the death, or serious illness, of the Leader he would take his position, except that he would not lead the party on land. He holds a master's certificate, and has been navigating officer of some of the finest steamers afloat, is a member of the Meteorological Society of London, and is qualified to undertake any kind of marine surveying.

R. Gethin Creagh, age 38, of the Manning River, who fills the post of sub-leader on land, is a most competent man for the work of exploration. Is six feet three inches high, with a strong constitution, ignorant of personal ill-health; he has had many years' experience of exploring, and in taking up and stocking new country in Queensland, South Australia, and New Zealand; also great experience of the aboriginals, being a good shot with rifle and fowling piece, and knowing bush life in all its phases. With these recommendations, combined with personal testimonials of the highest character, there can be little doubt of his fitness for the position assigned him. In the event of the Leader's death or illness he would take his position on land.

James H. Shaw, age 27, of Sydney, is a most enthusiastic explorer. He was eighteen months in New Guinea with the expedition of Mr. Andrew Goldie, and spent a further six months with another party of which, unfortunately, he was the sole survivor. He has great experience of river navigation, having sailed between three and four thousand miles in a Rob-Roy canoe on Australian rivers. He is able to turn his hand to almost anything, either ashore or afloat. The special duties assigned to him are those of photographer, and general assistant to the Leader.

Kendall Broadbent, age 55, of Sydney, is the general collector. He has been employed for many years collecting specimens of natural history in several colonies. Is well versed in ornithology and taxidermy, and in prospecting for gold, silver, and other metals, and has some knowledge of geology. He is placed under the orders of Dr. Haacke.*

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* This Scientist has been obliged to resign his position, while at Thursday Island, having experienced a severe attack of sciatica. See page 25.

Walter W. Froggatt, age 27, of Sandhurst, Victoria, fills the post of special zoological collector and assistant to Dr. Haacke. He is an amateur entomologist and naturalist, and has a good practical, though not scientific, knowledge of botany.

Wilhelm Bauerlen, age 40, of Sydney, is the special botanical collector. He has been employed in this capacity by Baron von Mueller, K.C.M.G., on whose recommendation he was engaged for this Expedition.

A. Hastings W. Senior, age 28, of Lismore, N.S.W., is a licensed surveyor, employed in the Department of the Surveyor-General; and has been some years at sea. His application was not received till late—owing to his absence inland—and it was declined at the time, the main positions being filled. However, the very week the Expedition left, room was found for him as a supernumerary, at a trifling salary, the Surveyor-General kindly consenting to this abrupt suspension of his work. There is no doubt that Mr. Senior is an acquisition to the Expedition, and his anxiety to do his utmost to promote its success is attested by the fact that he has taken with him scientific instruments and other articles of his own to the value of nearly £100.

Arthur J. Vogan, age 26, of New Zealand, was allowed to join the Expedition at the very last moment. He has many useful accomplishments—is an artist, understands photography, taxidermy, building huts, and every species of bush work. He not only offered to go as a volunteer, but tendered a subscription of £25 to the Exploration Fund. The subscription was declined, but Mr. Vogan was appointed a supernumerary at a nominal salary, in accordance with the general principle above cited. Mr. Vogan has provided himself with a first-class personal equipment.

Wm. McGechan, age 22, the engineer of the steam launch, specially selected by Captain Everill, has already proved himself a good man, and well worthy a place in this record. In the bad weather that overtook the Bonito while on the way to Brisbane he stuck to his work, almost without a rest, for three days and nights.

THE AGREEMENTS, &c., WITH THE PARTY.

It was thought wise to make the agreements with the members of the party of as binding and strict a character as possible. The following Covenant was therefore drawn up and duly signed. A Schedule attached gives the salaries that are being paid.

COVENANT.

This Indenture made the tenth day of June, one thousand eight hundred and eighty-five BETWEEN THE GEOGRAPHICAL SOCIETY OF AUSTRALASIA (hereinafter called the said Society) of the first part, Sir Edward Strickland, K.C.B., of Sydney in the Colony of New South Wales as President of the said Society of the second part, and THE SEVERAL PERSONS WHOSE NAMES and addresses are set out in the Schedule hereunder written of the third part. WHEREAS the said Society have inaugurated an Expedition to New Guinea having for its object the making of a scientific exploration of that island and the said Society have secured the services of the several persons appearing in the said Schedule to accompany the said expedition and to fulfil the several duties that will devolve upon them and in respect of which written instructions will be handed to Mr. Henry Charles Everill prior to the departure of the said Expedition. AND WHEREAS it is desirable that the respective obligations of those concerned should be evidenced by the signatures and solemn covenants as hereunder contained NOW THESE PRESENTS WITNESS that in pursuance of the premises and in consideration of the respective salaries allotted to the said several parties hereto of the third part, each of them DOTH hereby COVENANT with the said Sir Edward Strickland and his successors in office that they the said several parties will truly and faithfully observe and perform the duties that have been respectively assigned to them and which form the subject of instructions issued by the said Society to the Leader of the said Expedition and will in all things and at all times cheerfully obey the commands of the said leader and will do all things within the tenor of their obligations to bring the said Expedition to a successful

issue AND FURTHER that they will truly disclose to the said Sir Edward Strickland or other the President for the time being of the said Society all information scientific or otherwise that may be gathered whilst on the said Expedition nothing excepted or reserved, it being expressly understood that the said Society are to receive all the benefits and advantages that may accrue from the enterprise. IN WITNESS whereof the said parties to these presents have hereunto set their hands and seals the day and year first before written.

THE SCHEDULE REFERRED TO.

NAME.	AVOCATION.	SALARY PER MONTH.
H. E. Everill	Leader	£40 0 0
J. W. Haacke	Zoologist	35 0 0
S. A. Bernays	Surgeon	30 0 0
Godfrey Hemsworth	Sub-leader on board	15 0 0
R. G. Creagh	Sub-leader on land	15 0 0
W. W. Froggatt	Assistant Zoologist	15 0 0
K. Broadbent	General Collector	15 0 0
J. H. Shaw	Photographer	15 0 0
Wilhelm Bauerlen	Botanist	15 0 0

The following form of receipt will explain the arrangements made for payment of salaries.

Sydney, 9th June, 1885.

Received from the Geographical Society of Australasia, the sum of pounds, being salary from June 8, to July 8, 1885, the first month of my employment on the Society's New Guinea Expedition.

I request that one-half of my salary for the remaining months of the engagement be paid as it accrues due to The balance of my salary shall remain in the hands of the Society till the return of the Expedition and the payment thereof shall then be subject to the Society's approval of the way in which I have fulfilled my duties.

It is understood that this engagement does not exceed a period of six months.

It is further agreed that should this Expedition be unable to return by the expiration of the said six months, that any claim for such extra time shall be subject to the Society having funds to meet such claim.

I further agree that should I fail in any way to fulfil the duties of my position the retention moneys in the hands of the Society shall be absolutely forfeited to the said Society as liquidated damages for breach of engagement.

Dated this the eleventh day of June, 1885.

.....

Witness.....

It should be stated that the reason why this document limits the claim for salary of the members of the Expedition to six months was fully explained to all concerned, and is, that the Society having expended, or contracted engagements for, the whole of the funds contributed to it, (six months' salaries being included in the engagements,) could not undertake liability for a longer period. Should the party be unable to return within the stipulated time, or remain behind on their own authority, it would be manifestly unjust for the party to be able to claim salaries for such extra time whether the Society had funds or not.

Ship's articles were also signed by the whole of the party, with the exception of Drs. Haacke and Bernays, who were specially exempted therefrom.

It is to be noted that the whole of the party signed the various documents, stringent as some of the clauses undoubtedly are, with the utmost readiness, a pleasing evidence of the spirit in which one and all began their work.

The party, made up as stated, consists of 13 white men: on arrival at Thursday Island, this was increased by the addition of 11 Malays, specially engaged in Java for the expedition, by Messrs. Tidman, Balfour, & Co.. of Batavia, the correspondents of Messrs. Eldred & Co., of Sydney. This latter firm undertook to do all in their power to obtain good men, and their connection with Java gave value to their promise. The eleven Malays, who were due at Thursday Island about ten days before the exploration party, include a carpenter, a cook, and a serang or head man. The remainder are principally carriers; and as such Malays are considered far superior to white men. The Malays will bring the party up to a total of 24; and to this total will probably be added one or two New Guinea natives as interpreters.

THE DEPARTURE OF THE EXPEDITION.

On Wednesday, June 10th, the Society's chartered steam launch "Bonito," sailed for Brisbane, towed by the A.S.N. Co's. steamer "Egmont." She was in charge of Mr. Godfrey Hemsworth, the nautical sub-leader, and he was accompanied by Messrs. Creagh, Froggatt, Shaw, and Bauerlen, as well as the engineer and two men engaged for the run. Before the "Bonito" started the members of the Expedition, with a number of the members of the Society assembled in the saloon of the steamer "Egmont." Sir Edward Strickland, who presided, said that they had met there to bid farewell to the members of the Expedition and wish success to the enterprise which was about to be undertaken. He wished to avail himself of this opportunity to say a few words to the members of the Expedition, which, if not of service, he hoped would be received in the spirit in which they were given. He would like to point out a few rules that might be laid down for their guidance while they were away together; and here he might mention that he had received a telegram from the Hon. Secretary of the Melbourne branch of the Geographical Society stating that the Victorian members offered their cordial congratulations on the completion of the arrangements for the Expedition, and wished Captain Everill and his officers every success. The importance of this Expedition could scarcely be overrated, for it was second to none to New Guinea that had preceded it. They knew very well that some of the previous Expeditions had met with great hardships and loss of life; but those connected with expeditions and explorations whose work had been crowned with success had won for themselves undying fame. The same reward was in view in this enterprise, and he hoped it was what each member of the Expedition would endeavour to obtain. He was sure that there was not one member of the Expedition who did not feel that the enterprise would be judged from its results, and that there was not one who did not fully realise the importance of his mission. Exploration carried civilization in its train, and geographical expeditions had always been the precursors of commerce, and he felt sure that this would be no exception to the rule. All of them were determined to succeed, but to ensure success a great deal of work was required. It would be impossible for him to exaggerate the possible results of this Expedition. They were going into a new country almost untrodden by white

men. They were induced to explore another part of New Guinea by the bountiful manner in which the Almighty had enriched other parts of the island more or less explored. They hoped it would be the means of encouraging settlers to go to the country, and of offering some certainty of a subsistance, if they did not show where wealth could be rapidly acquired. Success could not be obtained without the exercise of prudence and cordiality in dealing with each other, and their first motto should be Temperance. He did hope that the leaders would bear this in mind. He had perfect confidence in Captain Everill, but he would venture to give him this counsel, that he would endeavour to suppress everything in the shape of intoxication, and if anything of the kind did occur, he hoped it would be dealt with summarily, and effectively so as to render its repetition very improbable. If he were the Leader, he would try to bring about some system so as to keep every man occupied as much as possible, and this he thought was not a difficult thing to do. If they worked together with the same objects in view, they would find strength in their union, the value of which would be ascertained in times of danger. Let them band themselves together for each other's protection, for where there was cohesion there was the greater safety. The Council of the Society had entire confidence in the qualifications of Captain Everill, but it would be impossible for him to perform his duties unless he was ably supported by those serving under him. They must obey their Leader, and his rule must be binding; and it must be a most sacred duty that, so long as his orders are just and reasonable, every one of them must stand by him, and support him in the exercise of his authority. Let them be very merciful with the natives, and not give way to temper, for they must recollect that these Nature's children do not understand meum and tuum, and that they must be treated like children. If they merited punishment, it could be given, but they need not draw blood—in fact he hoped that this Expedition would return without having shed one drop of blood—a result that could be obtained only by the exercise of sound discretion, mercy, and forbearance. He had found among savages that if they were dealt with liberally they would seldom steal, and if trade with them was carried on in a friendly way it facilitated progress through their country. Perhaps they might never have an opportunity of meeting again; but they would hope for better things, and so far as the Geographical Society was concerned, he would see that they received every necessary aid. Every attention had been paid by the Society to the fitting out of the Expedition. The steamer, provisions, and general equipment,

had been selected on the recommendations of the Commander of the Expedition, and every precaution had been taken to have the ship thoroughly examined, He had now only to hope that the day would come when they would congratulate each other upon their great success, and that another page would be added to the book of successful explorations from New South Wales; and that the new country traversed by this Expedition would be opened up in the future in a manner that they themselves could hardly now realise.

Mr. J. F. Mann said that he had spent about six weeks among the natives of New Guinea, and could bear testimony to the value of the advice tendered by Sir Edward Strickland. Trading with the natives required a great deal of tact. The law of blood for blood seemed to exist amongst the various tribes. If a European killed a native, or if a native killed another, they never rested until they killed some one in return. He had no doubt that this Expedition would be successful in its efforts to further reveal the wonders of the great and glorious island of New Guinea.

Mr. Harrie Wood said, as chairman of the Exploratory Committee, he had to acknowledge the onerous duties performed by its members in preparing the Expedition. It must be borne in mind that they were not merely a New South Wales Society; and that, while seeking to get men specially qualified for the work they had to do, the Committee had kept in view the fact that each Colony should be represented on the Expedition. The selection, he believed, had been a good one in every respect, for no body of men could have worked harder, both in the selection of the men and the fitting out of the Expedition with stores and scientific instruments. He trusted that the Leader of the Expedition would keep in sight the objects the Society had in this undertaking, and that he would facilitate in every way its progress. He wished every member of the Expedition success and a safe return.

Further remarks were made by Messrs. J. H. Maiden, C. S. Wilkinson, E. M. La Meslèe, and Dr. Belgrave, also by Captain Trouton of the A. S. N. Company.

Captain Everill, said that he was extremely grateful for the kind reference made to him by the distinguished President of the Society. He had only one or two words to say. They were all working with the one thing in view—to bring the Expedition to a favorable end. He would just say that they intended to do their duty, both as Englishmen and members of the Expedition, towards the Society which had sent them out. At the same time he would remark that a good deal depended on luck. They might be

successful without encountering any hardships, and on the other hand they might have great hardships without any success. He should, therefore, like the public to think well of them, and to retain their confidence in them, and he hoped they would have more to tell them when they returned than they had now.

The proceedings terminated with a vote of thanks to Sir Edward Strickland for presiding.

It was intended to have a photograph of the entire party taken on board the "Bonito," and Mr. J. Hubert Newman, of Oxford-street, was commissioned by the Council to take it, but the day was so exceedingly unfavorable that it was impossible for it to be done.

The explorers had a rough time of it on the way to Brisbane, meeting with head winds, and it was necessary for the "Bonito" to steam nearly the whole way, (although she was towed) and it was not till Sunday morning, the 14th June, that Brisbane was reached

The following are extracts from Mr. Hemsworth's report.

"Thursday, 11th June.—The sun set gloomily, and the sea commenced getting up; so every preparation was made for a dirty night; nor were expectations disappointed, for at about 9 p.m. the wind went into the N.E. with a considerable sea: however, all went well until morning, sea and wind increasing in violence."

"Friday.—Weather dark and cloudy with frequent rain squalls, high sea and fresh wind. In the afternoon two heavy consecutive seas broke on board, starting the after rail, and causing the little vessel to strain from stem to stern: immediately sounded the well, and finding we were making water, called on all the scientific staff to assist in freeing her from it. Some of the most distinguished members of that body were in the last throes of sea-sickness, and appeared perfectly indifferent as to whether they swam or sunk, but responding to the call of duty, did their utmost to assist their more fortunate comrades who were not afflicted with that most terrible malady, and all working together soon freed her from water."

"Saturday.—At 9 p.m. Cape Moreton was rounded. The returning smoothness of the water could be accurately calculated by the brightening countenances of some of the Expedition."

On the 13th of June the Leader, Captain Everill, accompanied by Dr. Haacke, Dr. Bernays, Messrs. Senior and Vogan left Sydney in the steamer Wentworth for Brisbane. The hon. Secretary of the Society, Mr. J. H. Maiden, went with them to Brisbane with a view to see the Expedition off from there, and arrange many matters of detail. The party reached Brisbane in

safety and had about forty-eight hours to spend there before proceeding. This time was well occupied; Mr. Maiden, the Leader, and several of the scientific staff being kept very busy. Mr. Gray, the Under-Colonial Secretary, was seen, and the Society is indebted to him for much friendly assistance, and also for a promise that efforts should be made from time to time to communicate with the Expedition during its absence. The Postmaster-General consented to all the telegrams relating to the Expedition being sent free; a boon of which full advantage was taken. The Treasurer gave orders that the Customs officials at the various ports were to forego the usual formalities. The Marine Board kindly presented the Expedition with the latest New Guinea charts, and a tracing of Commodore Erskine's New Guinea map. These and many other kindnesses extended to the Expedition whilst in the Capital of Queensland have been thoroughly appreciated by the Council, and deserve the most hearty thanks of the Society.

The Expedition left Brisbane on Wednesday, June 17th, arrived at Rockhampton on the 19th, at Bowen on the 20th, at Townsville on the 21st, and at Cooktown on the 22nd. Cooktown being the limit of telegraphic communication, the following final farewell messages had been sent there, addressed to the Leader.

(1) From Baron Ferdinand Von Mueller, K.C.M.G., Vice-President of the Victorian branch:

"Baron Ferdinand von Mueller, is anxious you shall not start without a final word from him. Please accept his most earnest wishes for the complete attainment of the object of the Expedition, and a safe and happy return of yourself and your fellow workers."

(2) From Sir Edward Strickland, K.C.B., Vice-President of the New South Wales branch:

"As President and on behalf of the Administrative Council, I send to you, and through you to all your companions, this farewell greeting. May safety and success attend you; be united, make duty paramount, and difficulties will then grow less; your honour will be secure, and Australia will be proud of you."

(3) From Harrie Wood, Esq., J.P., Chairman of the Exploratory Committee:—"The chairman and members of the Exploratory Committee wish you and your friends farewell. They have done their best for the Expedition, and are now full of hope and confidence that through your zeal and enterprise a great and splendid success will crown its work."

The following reply was received from Captain Everill:—"Read telegrams to party—all in high spirits. Members of the Expedition send their adieus to Council, Committee, and Society;

thanking them for their good wishes, and trusting by perseverance to retain their confidence, and merit their good opinion. Good-bye."

The expedition left Cooktown at daybreak, on Tuesday, the 23rd June.

By messages sent to Cooktown, and telegraphed from there, news has been received that the Expedition reached Thursday Island on the 25th June. The following message from the Government Resident (The Hon. J. Douglas) to Sir Edward Strickland, came to hand on the 1st July:—"Shall have much pleasure in affording New Guinea Exploring Party every possible assistance. Have conferred with Captain Everill, and hope to introduce him, to-morrow, to Mr. McFarlane, from Murray Island."

Messages from the Leader stated that the "Bonito" required some repairs, which were being effected; that Mr. Broadbent, the General Collector, was suffering from sciatica—and as the Surgeon thought the complaint was likely to return at any time, if Mr. Broadbent got wet, it had been decided that he should return to Sydney. The Council regrets to lose his services; but, happily, the Expedition is large enough for his special duty to be still properly performed.

The Malays were, as expected, already arrived, and the Leader appears to be satisfied with the men. Unfortunately, Mr. H. O. Forbes had not arrived; so that the meeting of the two parties that had been expected may not take place. With regard to interpreters, Captain Everill was likely to be able to make very satisfactory arrangements, as the Rev. Mr. McFarlane had most kindly undertaken to accompany the Expedition to Kewi, where his influence will, doubtless, secure reliable men. The Council is much gratified by the probability of good interpreters being obtained, as it is a matter of great importance.

The Under Colonial Secretary of Queensland has telegraphed that it had been arranged for the "Advance" to leave the Expedition at Brampton Island, at the mouth of the Fly River.

July 14th.—The following message, dated July 8th, telegraphed from Cooktown, is to hand from the Hon. John Douglas of Thursday Island:—"Am leaving to-day with Rev. Mr. McFarlane for Saibi and Katow to meet Geographical party at entrance to Fly River on the 15th. 'Bonito' has been thoroughly overhauled, and everything promises well. Party in good spirits and well ordered. Everything will be done on our part for them. 'Mavis' (Queensland Government schooner) takes twenty tons of coal for them to Fly River."

The Leader also sends a message. He states that the stores are shipped; that the Surgeon reports all the party, including the Malays, fit for service; that the "Bonito" was to leave on the 11th in tow of the "Advance," the "Mavis" also accompanying with a supply of coals; that it was arranged for the Expedition to wait in Missionary Pass for the Hon. John Douglas and the Rev. Mr. McFarlane, who were expected to be there on Wednesday, the 15th July; that the Expedition would probably try a branch of the Fly River (100 miles from its mouth) running in a north-easterly direction—but in this would be guided by final information received through Mr. McFarlane and others.

The Expedition is now fairly launched, and all connected with the Society can but feel deeply grateful for the kind and valuable assistance rendered to it at Thursday Island.

THE EXPLORATION FUND.

At the commencement of the year, as already stated, the Council had the promise of £1000 from New South Wales, with the promise of a further £1000 conditionally on other Colonies contributing: at that time Victoria had already contributed £1000; and in March the Queensland Government also voted £1000, which enabled the Council to claim the conditional grant made by New South Wales. A sum of £4000 therefore was available, the whole of it being voted for exploration in New Guinea.

Applications for grants were made to the Governments of South Australia, New Zealand and Tasmania. Replies have been received from the two latter Governments, declining to make the grants, on the ground that their respective Colonies were not sufficiently interested in New Guinea; the former Government has twice written to say that the application was under consideration. The Council therefore entertain a strong hope that before long a contribution will be made by South Australia. The sum of £4000 was not large enough for the Society to carry out the full scheme of exploration that was desired; and if the steam-launch required for the Expedition had not been hired, instead of purchased, the Council would have been greatly crippled in its work. It was thought that the Sydney Chamber of Commerce

might be induced to use their great influence to assist the Council in raising £1000 or £2000 amongst the commercial public. The Chamber most readily consented to receive a deputation from the Society, and held a special meeting of their Committee for the purpose, on April 21st. The deputation consisted of Sir Edward Strickland, K.C.B., Mr. Harrie Wood (Under-Secretary for Mines), Mr. C. S. Wilkinson (Government Geologist), the Rev. W. Wyatt Gill, M.A., and the Secretary, Mr. Edward Pulsford.

Sir Edward Strickland, in pointing out the objects of the deputation, remarked that they had waited upon the Board to perform a duty which, perhaps, had much better been performed long ago: in which event, possibly, both societies—the Geographical Society and the Chamber of Commerce—might at present have been working together. The neglect had been on the part of the Geographical Society; but it was to be hoped that from that day they would take a new departure, and witness a great advance for the benefit alike of commerce and geographical research; especially in the direction of co-operative action. (Hear hear.) It was by no means the first time, or the first place, that such an attempt of mutuality of commercial and geographical enterprise has been made with immense advantages to commerce and science in all their branches. The facilities now offered for travel, and the generosity with which the Society had been supported at home, and by kindred Societies elsewhere, made it imperative upon them to endeavour to perform as good service as had been performed elsewhere. (Hear, hear.) The New South Wales Society was but in its infancy, and their troubles were very great. However, he felt certain that when they became thoroughly well-known to the Chamber of Commerce, their efforts would receive every assistance and co-operation. He would particularly like it to be recognised and appreciated how thoroughly a course of co-operative action between Commerce and Geography must tend to benefit both: geographical exploration and the extension of civilization and commercial relationships must advance hand in hand; and, in proportion as they made fresh steps in Geography, the first to derive benefit therefrom would be Commerce. It would readily be seen how essentially useful they might prove to one another, if working together. Albeit the Society was in its infancy and comparatively weak, they were none the less fully determined to carry out the labours placed upon them. They meant to geographically explore, and to be the pioneers of New Guinea. (Hear, hear.) He prognosticated that before very long they would find commerce rapidly following their explorations. As a matter of fact, commerce was already there, inas-

much as cedar-cutters and almost every other kind of timber-cutters were on the island, and had stocks ready for shipment. The timber trade, however, though, by no means an insignificant factor, formed but a very small part of the commerce and trade which might be expected from that great island in the future. The Society's pecuniary difficulties were very great, albeit its influence and usefulness were extensive to a degree. They would much wish to secure the sympathy and co-operation of the Chamber of Commerce. At the very utmost their funds amounted to about £4,000; £500 of that they had voted to Mr. Forbes, the well-known explorer, a gentleman of high character and bright career as a pioneer in unexplored countries. And in passing he would take the opportunity, on behalf of the New South Wales Geographical Society, of expressing his warmest thanks for the Victorians' hearty sympathy in every way. (Hear, hear.) It would be an extremely weak and impolitic plan to despatch a small and improperly equipped party for such an important and responsible task as the exploration of New Guinea. Equally would it be absurd to attempt the task with inferior machinery for the undertaking, or an inferior steam launch, as a result of which everything might come to grief. A general feeling was abroad in Sydney and in Melbourne that before commencing they should provide good instruments, and good men. (Hear, Hear.) They all, of course, knew that without money nothing could be done, and if a person wanted anything done well, cash must be provided wherewith to pay for it. It would be readily seen that deducting £500 for Mr. Forbes, and another £1500 for a steam launch—without which nothing could be achieved—the remaining £2000 would not suffice to pay for keeping up an expedition for six months. He thanked the Board for the attentive hearing which had been accorded to the deputation, and expressed a wish that *coram populo* the benefits of the Society might be made manifest and proclaimed.

The Chairman (Mr. W. G. Murray) remarked that having only just returned to town, and received a notification of the meeting, he had not had time to frame any sort of formal or official reply. The Chamber of Commerce was not very wealthy. For the carrying on of their own more immediate work, certainly, they could raise funds; but of course special reasons would have to be given for voting funds outside of it. He thanked the deputation very much for the information they had afforded, and for having pointed out so clearly and briefly the intimate connection which existed between geographical development and commercial prosperity. In point of fact, the very colonies in which we lived—

including Victoria, New Zealand, Tasmania, &c.—were exemplifications of the truth of what had been stated, Captain Cook's explorations, and the subsequent rise and marvellous prosperity of Australia proved this. He thought he might take it upon himself to say, without conferring with the other members of the board present, that the Chamber would take a deep interest in the work that the Geographical Society had undertaken. Hear, hear.) He had been delighted to see the enthusiastic way in which the matter had been taken up, and desired that his name might be added to the list of the Society's members; and at the same time he could not see why individual subscriptions should not be forthcoming.

In the course of the ensuing discussion, the Rev. W. Wyatt Gill, M.A., alluded to his experiences in the island, and to the almost inconceivable fertility of the soil, and richness of vegetation, He instanced one natural production—jute—which grew profusely. A sample of this, when in Europe, he had shown to Mr. Dalgleish, a well-known Dundee spinner. That gentleman, after examining it, had at once volunteered to purchase every ton of it that could be procured. It was running wild on every hand in New Guinea without any attempt at cultivation.

After some further incidental discussion, the Chairman intimated that the members of the Society would, in all probability, hear from the Chamber of Commerce before long, and the deputation having returned thanks for their reception, withdrew.

Since the meeting, the Chamber of Commerce have intimated that they are drawing up a circular to send to the leading firms; this is being deferred until the completion of this Record, so that copies of it may be sent with the circulars. Mr. P. J. Clark, the Secretary of the Sydney Marine Assurance Company, having kindly undertaken to pave the way for the insurance of a steam-launch, the necessity for purchasing one ceased, and the Council were able to proceed with the arrangements; and, with care and economy, to prepare a thoroughly first-class Expedition; though unfortunately not without, at the last, considerably exceeding the available funds, after calculating the expenditure for six months. The following is an approximate statement of the payments already made, and the liabilities incurred.

	£	s.	d.
Allowance to Mr. H. O. Forbes	500	0	0
Salaries of leader, scientific staff, &c.	1400	0	0
Pay of Malays	200	0	0
Carried forward,	£2,100	0	0

Brought forward,	£2,100	0	0
Fares of Malays from and to Batavia	110	0	0
Expenses in connection with Malays	100	0	0
Expenses Leader, &c., Sydney to Thursday Island and back	65	0	0
Steam Launch—Hire 6 months, at £50 per month	300	0	0
Do. Insurance £1500, at 10 per cent.	150	0	0
Do. Stores, Fitting out, &c.	200	0	0
Do. Coals, &c., &c.	50	0	0
Do. Towage, Thursday Island and back	50	0	0
Insurance on Stores, &c., £500 at 10 per cent. ...	50	0	0
Whale Boat	45	0	0
Salary of Secretary, telegrams, printing and sundries	300	0	0
Provisions	300	0	0
Arms and ammunition	170	0	0
Medical stores	50	0	0
Trade	40	0	0
Scientific instruments, &c.	200	0	0
Sundry stores and contingencies	220	0	0
	£4500	0	0

This statement shows that a deficiency of £500 may be expected at the close of the present exploration, early in December next, and should the Expedition be detained, or serious contingencies arise, the deficiency would be increased. With this statement before the public, it is hoped that the subscription which has been set on foot will be well supported—indeed, the public of these colonies may well, and wisely, be asked to subscribe a total of £2000, for it must be remembered that the present exploration, however successful it may be, can only do a small portion of the work that has to be done in New Guinea. and that large funds will yet be required. It is evident that, with an Expedition already in the field, it might be very desirable, at the close of six months, to refit it at Thursday Island, instead of bringing it back to Sydney, disbanding it; and then at a little later period going through the whole laborious and costly process of preparing an entirely new Expedition. The Council therefore appeal direct, and through the kind agency of the Sydney Chamber of Commerce, and other public bodies, to the public spirit of the business men of these Colonies for help in this work of exploration—the greatest ever undertaken by Australians outside Australia.

The following subscriptions have already been promised:—General Sir Peter Scratchley, K.C.M.G., £5; Hon. G. H. Cox, M.L.C., £5; E. Du Faur, Esq., £10; C. S. Wilkinson, Esq., £10; Dr. Belgrave £5; F. Gerard, Esq., £5; Messrs. Eldred & Co., £10.

A Special Finance Committee, consisting of Messrs. Harrie Wood, and Francis Gerard, was appointed by the Administrative Council in January to receive and pay monies in connection with the Exploration Fund. The Federal Bank are the ordinary bankers of the Sydney branch of the Society, but, with a view to secure the greatest exactness, a special account for the "Exploration Fund" has been opened at the Mercantile Bank of Sydney.

INSTRUCTIONS ISSUED FOR THE GUIDANCE

OF

THE NEW GUINEA EXPLORATION EXPEDITION.

SYDNEY, JUNE 12TH, 1885.

GEOGRAPHICAL SOCIETY OF AUSTRALASIA,
142 PHILLIP STREET,

Sydney, 10th June, 1885.

To CAPTAIN EVERILL, Leader of the Expedition to New Guinea of the Geographical Society of Australasia.

DEAR SIR—It is with much pleasure that I announce to you, previous to your departure in command of the very important Exploratory Expedition to New Guinea, that you take with you the full confidence of both Councils of the Victorian and New South Wales branches of the Society, as to your fitness for the office to which you have been appointed. Their confidence is based chiefly upon the excellent certificates which you have produced, the high character which you bear in this community, and your experience in tropical exploration.

Addressing myself now to you, as the mouthpiece of the Councils already alluded to, I wish you clearly to understand that, whilst we are unwilling to hamper you with many detailed instructions, yet, bearing in mind the great power placed in your hands over those associated with you in the Expedition, and over the property and interests of the Society, we feel sure that you will hereafter afford proof, by the success of the Expedition, that our confidence is not misplaced, and that you are well able to bear the heavy burden of responsibility which you have undertaken.

In so far as the united funds available to us have permitted, we have supplied you liberally with experienced scientific and other assistance, all subject to your own approval, and with stores selected also at your suggestion; the steam launch has also been specially chosen by you, as well as the whale-boat, which, it is hoped, may prove a valuable addition in the work of exploring rivers or creeks.

Thus liberally supplied with men and all necessary means to carry on the work of exploration, the Society looks forward with some certainty to a great success, and abundant additions to our present limited knowledge of New Guinea, geographically and otherwise.

The Society is of opinion that the acquiring of accurate knowledge of the geography of the new country you are about to enter is of primary importance; it will therefore be your duty to map out with care all the new country through which you may pass, noticing the physical formation of such country, such as the rivers, mountains, and other important features.

An ample supply of material requisite for the preservation of specimens of Natural History and Botany, has been furnished to you, and as it will be impossible to replenish such materials whilst away from civilization, they should be husbanded with great care. The same economy will be exercised in regard to all stores placed under your charge, and it will be your duty to watch over the expenditure of all stores and supplies with a very watchful eye, and to impress upon every one serving under your orders the necessity of the practice of strict economy. This economical and conservative spirit should be enforced from the very day of starting, and it should never be lost sight of that it may easily occur that the whole success of the Expedition may become dependent upon the advice now given being acted upon in its true spirit and reality. A scale of rations should be laid down before you embark, and this should be strictly adhered to, except under medical advice or pressing emergency, the reality of each case being left entirely to your decision.

To one accustomed to command men, it can hardly be necessary to refer to the imperative necessity of using the authority placed in your hands at all times with equal firmness and discretion. I feel an inward conviction that there is not one amongst those who have volunteered to serve under you who will not be ready himself to yield an implicit obedience to your just orders, and to encourage in others the same spirit, and all will recognise at all times the danger to the whole Expedition if ever any departure is permitted from this great golden principle.

More formal instructions will be given to you in another paper, the object of this somewhat informal communication being to place before you briefly the leading features of the important duties and responsibilities which have fallen to your lot, and to impress upon you some points which my own experience has taught me, may, though small of themselves, be made to exercise in the aggregate a great influence over the future of the Expedition, if neglected or treated lightly.

Your Journal and Log-book will both be looked for with great anxiety by the Society, and I anticipate much pleasure in publishing them, and thus securing to our Society an abundant mead of praise, and to you a highly creditable place in the ranks of English explorers, who have done so much to promote the science of geography all over the world.

As regards your correspondence, you should take every possible care to ensure the Society receiving information as frequently as possible of your progress and proceedings. You will receive instructions on this point officially. I am myself of opinion that the missionaries on the spot, and the Government Resident at Thursday Island, will be the best channels through which to keep your Expedition in communication with Australia.

I hope very much that you may meet Mr. Forbes at Thursday Island or Port Moresby, or elsewhere. It cannot fail to be of great consequence to the ultimate success of the efforts about to be made by Mr. Forbes and yourself in the interests of geography, if you can meet and confer together, with a view to establish if possible, a co-operative action, before you actually commence the task of exploration,

It will be very necessary that it be clearly explained to all under your command, that all specimens collected are the property of this Society, and they are not authorized to appropriate to themselves, or to dispose of to others, any portion of what has been collected by the Expedition whilst in the service of the Society.

Very strict rules should be laid down with reference to the use of fire-arms, and in preparing these rules one cardinal point

must always be held clearly in view, *i.e.*, it must be insisted upon that a native must never be fired upon except the life of a member of the party is in danger. Everyone belonging to the Expedition should be made to feel the necessity of adopting the spirit of this rule, and putting it in practice himself and enforcing its practice upon others—one shot fired with a fatal result would make me feel very despondent as to the success of the Expedition, certainly it would immensely increase the difficulties of exploring. No precaution, therefore, should be omitted to avoid any such untoward event.

In the matter of trade, a liberal or rather a generous spirit should, as far as possible, be shewn, thus utilizing the infancy of commerce as means to advance civilization. Every opportunity should be availed of to establish a friendly feeling between the members of the Expedition and the natives; efforts should be made to amuse them, and you cannot impress it too earnestly upon all under you that the safest and the most profitable treatment to adopt towards the natives is one of conciliation, treating them always as children—Nature's children. I am perfectly aware that circumstances may easily occur where a very opposite course of treatment may be forced upon you: in such a case I can only counsel firmness and all forbearance that is consistent with your own safety.

I will conclude this, my farewell letter to you, by reminding you that a grand field of action is opened to you, a glorious opportunity is offered to you of acquiring great fame, which ought, and I am sure will, call for every energy of your nature, and the vigorous exercise of every ability that God has given you which may tend to the accomplishment of a triumphant success, no matter how perilous and apparently insuperable may be the obstacles opposed to you.

Of course you clearly understand that nothing in this informal letter is to be interpreted as cancelling or superseding the detailed instructions which will be furnished to you and the members of the party. Each member of the party should, during the voyage to New Guinea, make himself thoroughly intimate with those instructions, as ignorance of orders will not be accepted as an excuse for neglect of the same.

Believe me to be, Dear Sir,

Very faithfully yours,

(Signed) EDWARD STRICKLAND,

President of the Administrative Council

Geographical Society of Australasia.

NEW SOUTH WALES BRANCH,

Sydney, June 12th, 1885.

CAPTAIN HENRY CHARLES EVERILL,

SIR,—On the 7th of May you were advised that this Society had elected you "to the important position of Leader of the Society's New Guinea Exploration Expedition." Since that date the preparations for the Expedition have been continued carefully and energetically. A scientific staff, including a thoroughly efficient surgeon, has been chosen; competent sub-leaders have been selected, as well as several supernumeraries; and eleven Malays (picked men) have been brought from Java. The principal appointments have been made after advertising for applicants in South Australia, Victoria, New South Wales and Queensland, and careful enquiry as to the ability and character of those selected, and in the selection the Melbourne branch of the Society has co-operated.

The A. S. N. Company's steam launch "Bonito" has been chartered for the party, after being selected by you as specially fitted for the purpose. The Expedition will start well provided with stores, provisions, trade, firearms and ammunition, scientific instruments, medicines and medical comforts, all carefully selected by competent men, and in the purchasing, packing, etc., of these articles, you have been fully consulted.

Considering the limited funds at the command of the Society, the Council is well satisfied with the equipment of the Expedition, and has no doubt that it is fully equal to the work that is before it. The "Bonito" will be towed to Thursday Island by a steamer of the A. S. N. Company. On the way you will spend a short time at Brisbane, and you are furnished with a letter of introduction to the Colonial Secretary of Queensland, on whom you will please call, and you are requested to give him any information about the Expedition that may be of interest to him; and you will thank him for the consent given to the request made by the Society, that the Queensland Government would kindly grant the Expedition the assistance and the honor of the convoy of the steamer "Advance," from Thursday Island to New Guinea. You will also call on the Postmaster-General, and urge him to grant

the request made to him by letter, viz.: that telegrams for, from, or relating to the Expedition, may have free transmission over the Queensland lines. You will further arrange with the proper authority that the Customs Officials at Thursday Island be requested to forego any formalities that would hamper the Expedition. If, at Brisbane, you find yourself in want of coal, or any other essential article, you will please obtain it through or of the Agent of the A.S.N. Company, and for the amount of any such purchase you will give an order on the Society. Should necessity of any kind drive the Expedition into any other port before reaching Thursday Island, you will avail yourself of the presence of the Agent of the A. S. N. Company at such port, and reimburse him in the same way for any needful outlay. Arrived at Thursday Island, you will please call on the Government Resident, the Hon. J. Douglas, whose good offices on behalf of the Expedition have already been solicited by the President, Sir Edward Strickland, K.C.B. Mr. Douglas being a member of the Society, you will be likely to receive valuable assistance from him, should any emergency arise. The B.I.S.N. Company's steamer "Westminster," bringing the Malays from Batavia, will probably have arrived about a week before you. Messrs. Burns, Philp and Co., kindly instructed their representatives to take charge of these men, and they will debit us direct with any expense incurred in relation to them. It will be advisable for the surgeon to examine the Malays, and should any of them be found physically unfit for the Expedition you will not take them, but will make some equitable arrangement for their return to Java. In the event of any of these men being found to be unfitted for the Expedition you are at liberty to take other men in their place. The Agents of the A.S.N. Co. will supply you with coal and any other necessary. Before leaving Thursday Island you will (1) make an examination of the "Bonito," her machinery, &c., and make sure that all is in satisfactory order. (2) You will also arrange with the Government Resident for letters, news, &c., from, for, or relating to the Expedition, being forwarded as opportunity may permit. Mr. Douglas will perhaps kindly consent to undertake to see this important duty performed. (3) You will see that the stores, &c., &c. are carefully transhipped to the "Bonito," and that the ammunition is stowed in two or more separate places, protected against climatic influences or salt water, with waterproof wrappings; and you will have the magazines built into the ship, but not so as to be immovable. (4) You will endeavour to see the captain of the schooner "Elsea," and obtain from him any information he can

give about the Coast of New Guinea, of which he has had great experience. (5) You will complete arrangements for protection against fire. (6) You will give the Nautical Sub-Leader full inventories of all stores, &c., &c., and request him to check them.

You will earnestly impress upon him the serious responsibility attaching to the position conferred upon him. His duties at all times will combine those of chief officer and purser, whilst during your absence he will also act as master; he will then have in his custody valuable property and records which could not be replaced, and, more important still, the stores of various kinds on which the health and safety of the party may depend. A few moments of carelessness on his part might cause a disaster that would be irreparable. At your early convenience you will give him a copy of these remarks.

On the return of the Expedition you will dispose of the unused stores, provisions and trade, at Thursday Island, if you can do so to advantage.

You will be good enough to bear in mind that the charter and insurance of the "Bonito" expire on the 8th December; it is desirable therefore that you should be back in Sydney before that date.

The Council has caused the enclosed instructions to be drawn up and printed, and you are requested to hand at once to each of the members of the party a copy thereof, with reference to his special as well as general duties, and to observe the special instructions and views which have been adopted in connection with the duties which devolve upon yourself as Leader.

By direction of the Administrative Council.

Your obedient servant,

(Signed) EDWARD PULSFORD, Secretary.

INSTRUCTIONS FOR THE LEADER.

THE object of the Expedition is to ascertain and fix the geographical features of New Guinea and the nature of its fauna, flora, geology, and climate, and to illustrate the same by specimens, sketches, photographs and written descriptions. And it is the primary duty of the Leader to facilitate in every way the accomplishment of this object by consulting as far, and as frequently as possible, with the members of the Expedition in regard to the country to be explored, and in all cases of importance and emergency. Nevertheless he is authorized to act at any time independently of their judgment, but shall enter in his diary his reasons for so differing.

Should the Leader at any time be incapacitated from duty, or, if in his discretion it may appear necessary to divide the party for the purpose of exploration in different directions, he is to assign his position on board to the Nautical Sub-Leader, and to Mr. Creagh on the land. The Council, however, desire that such division of the land party shall not be made except in case of absolute necessity. In the event of the total incapacity, or death of the Leader, the Nautical Sub-Leader shall assume command; but Mr Creagh shall be the leader of any expedition on land.

The Council having decided to make, if possible, the Aird River the basis of operations of the Expedition, requests the Leader to proceed thither from Thursday Island.

The Leader shall proceed up the Aird River until he finds a convenient landing place near to a hill marked on the Admiralty Chart as Aird Hill.

After leaving a party in charge of the steamer sufficient for its safety and protection, the Leader shall proceed with the rest of the party, including the scientific staff, to Aird Hill; and if it be found that that hill forms part of a spur from the Main Dividing Range in the interior of New Guinea, he will follow up that spur as closely as he can to that Range. Should he, however, discover a more practicable route from Aird Hill to the Dividing Range than by following such spur, he shall take it: the first named route is suggested to him as the Council desires him to leave the low lying country, and to direct his attention chiefly to the exploration of the high lands.

In the event of Aird Hill not forming part of a spur from the Main Range, the Leader should ascend the first spur that he meets with on the same side of the river, and follow it up to that Range.

The Leader will make arrangements for keeping open a communication in his rear to the steamer as a depôt, so that he may be enabled to make his movements known, transmit from time to time the scientific objects collected, and receive any stores required.

The Leader is responsible for the organization and carrying out of all vigilance arrangements in camp and field on which the safety of the party will so much depend.

He is to endeavor to promote friendly relations with the natives and to avoid any possible collision with them; never resorting to the use of fire-arms for defence except in case of extreme necessity: as it will be a source of great satisfaction to the Society if the objects of the Expedition should be attained without loss of life.

The Leader is requested to obtain and note information regarding the language, habits, and customs of the natives; the character of their implements and utensils; and, in reference to their modes of sepulture, what implements, if any, or food, are buried with their dead, also, whether periodic feasts are held at the graves, and the traditional object of such customs.

In the event of the route by the Aird River proving impracticable, the Leader will choose the first available estuary to the eastward thereof, and from the depôt there formed will proceed with his land expedition on a similar basis to that laid down in the case of the Aird—namely, to ascend the first available high land and work thence to the Main Dividing Range; to attain and explore to the furthest possible limit of that range within the boundary of the British possession being the principal object of the Expedition.

He is to note the distance and course travelled, and to describe and fix the position of all the principal physical features of the country along the line of route, and on either side of it, as far as practicable: and daily to complete, from his observations, a feature map of the country traversed, a copy of which may be furnished to the scientific officers of the party, if desired. He is to note the number, character, distance apart, and general trend or fall of all water courses, or drainage channels crossed: the quality of water, if any, in such courses or channels: the mode of occurrence of water: springs, lakes, pools, or running streams, with average depth of the same: the indications relative to probable permanence or otherwise of the same: also of periodical floods.

As it is very desirable that the route should be so marked as to be readily distinguished from those of other expeditions,

the Leader shall mark, or cause to be marked, on the nearest large tree at each camp the initial E., with the number of each camp and the date. This is to be done by removing a sheet of bark, taking care not to injure the tree, and then by means of a chisel to make the required mark. Thus, E.—8 will indicate the eighth camp; 5 | 10 | 85 the date; the word "Dig" will of course refer to a message buried near the tree.

The Leader is to mark the routes as permanently as practicable, by building cairns, and marking trees and rocks, at as many points as possible, consistently with his various other duties; a record being kept of the marks made in all the more important places.

Every opportunity should be taken to ascertain the geographical position of the party by referring it to some well-marked point, as afforded by an easily recognizable mountain, the junction of rivers, creeks, etc.

This should be done by astronomical observations, as well as by dead reckoning. The dead reckoning always to commence with the last good, reliable astronomical observations made.

The altitude of all the principal hills and valleys crossed to be noted from aneroid observations.

At every camping place a systematic registration of the pressure and the temperature of the air should be carried out. The hours of registration are to be as numerous as possible. The hours 6 a.m., 9 a.m., 3 p.m., and 9 p.m. being obligatory. The state and changes of the weather, storms, direction of the wind, etc., should be daily recorded.

The Leader is to make arrangements for an exact account being taken of the stores and their expenditure, by the persons in charge of them.

The Leader is to address all his communications, on subjects connected with the exploration, to the Secretary of the Society, and all persons acting with him are to forward their communications through him.

He will cause full reports to be furnished on any subject of interest, and forward them to Sydney as often as may be practicable without retarding the progress of the Expedition.

On the completion of the exploration of the Main Dividing Range as previously proposed, the Expedition shall return to Thursday Island for the purpose of delivering under seal into safe keeping of the Government Resident there, all specimens and records in their possession. And should time allow of further exploration of New Guinea, the Leader, after consultation with the members of the Expedition, shall decide upon the course to be adopted.

Instructions for the Nautical Sub-Leader.

He shall have charge of, and be responsible for, the safe keeping and properly authorised issue of the stores, provisions, trade, arms, ammunition, &c., on board the steamer, and shall keep a clearly written record of the disposal thereof, so as to be able at any time to tell the quantities remaining. He shall keep an account of expenditure. In the absence of the Leader, he shall have sole control of the steamer, and he must carry out to the smallest detail, the instructions left by the Leader. He shall never relax that vigilant watchfulness, or cease to observe those needful precautions, which alone can be relied on to effectually prevent a surprise.

The Nautical Sub-Leader, during the absence of the Leader and land party, when carrying out any system of river exploration which may have been determined upon by the Leader, shall leave in a cache, previously pointed out to the party, a clear explanation of the date, direction, and probable duration of his absence, in case of the unexpected return to the depôt of any of the party.

Instructions for Mr. Creagh, Sub-Leader on Land.

He shall prepare the equipment of the land party. He shall assist the Leader in carrying out the details of camping, travelling, etc., and be responsible that the Leader's instructions for the safety and health of the party are carried out. The condition of the firearms and the safe packing of stores, etc., shall be his special care. He shall also assist the Leader by his example and vigilance in preventing surprises by the natives. When on the steamer, in the absence of the Leader, he will assist the Nautical Sub-Leader in maintaining discipline, acting in these circumstances under his orders.

Instructions for the Surgeon.

The duties of the Surgeon shall be to place himself at the orders of the Leader in reference to station; to have exclusive charge of the medicine chest and medical comforts of the sick; and he shall be at liberty to select, with the consent of the Leader, necessary assistance from among the Malays. In case of necessity the Surgeon shall have the right to claim assistance from any member of the party, the Leader consenting. The Surgeon shall keep a clinical record of each case of illness. He shall direct the work of the botanical collector.

Leader's Assistant and Photographer.

He shall enter in his note-book, under a given number, a description of each view taken, with the time of exposure of the photographic plate: on the plate he is to affix a number corresponding with the number entered in his note-book. He shall act specially as Leader's Assistant, as directed from time to time.

Instructions for Zoologist.

The Zoologist is to direct the work of the geological and zoological collectors, and to receive from them a complete inventory of all specimens collected (the inventory to be kept in duplicate); to furnish each collector with numbered labels to affix to each specimen where possible, the number of each label so affixed to be entered by the collector in his own note-book; to see that the specimens are all properly cured, labelled, packed and stored.

Geology.

Note the occurrence of all rocks, their character and extent, or the distance travelled over them; note the nature of the soil both where rocks occur at the surface, and where they are not seen.

Where slate, granite, or diorite formations occur, prospect the gravel where it rests on the bed rock, in the gullies, or beds of streams for gold, tin ore, gemstones, &c. Collect samples of all metals and gemstones found.

If quartz reefs, or ironstone, or other metalliferous lodes are met with, break up some of the stone and wash it for metals, which, if found, save small samples. Note the compass direction that the quartz reefs, &c. run in; and whether they traverse slate, granite, or other formations.

In beds of streams flowing from a locality to which you have not access, take note of the different kinds of pebbles that occur; and if possible, collect samples.

Where basalt rock is seen resting upon slate or other formations, examine if any quartz pebble drift occurs between them; if it does, wash some of it for gold or tin ore, &c.

If crystalline particles be seen in basalt rock, collect small samples of them.

If shales or sandstone rocks contains impressions of fossil leaves, examine the locality for coal. Note the direction in which the strata dip, and take the angle of dip.

Note the occurrence of all rocks containing fossil plants or marine shells; if possible, collect some of the fossils.

In limestone country particularly, fossils are likely to be seen in the rocks If caves occur, examine the earth on the floors for bones.

Of fossil animals, if any should be noted, it would be very desirable to secure characteristic specimens.

Collect specimens of different kinds of rocks, and duplicate specimens if possible. All specimens to be numbered consecutively and entered with a corresponding number in a book kept for that purpose, with the locality, height above the sea level, and date of collection, and ashort description of each. The numbers also to be entered in the diary on the day of collection thus:—August 22nd, 1885, specimens 1 to 20, stating whether rock, mineral, or fossil. Describe the surface features, whether undulating, precipitous, rocky, mineral, character, &c. of the different formations. Each specimen to be wrapped separately in paper. The locality and date of collection to be written in pencil on the wrapping paper. The specimens not be larger than 2 x 1 x 1 inches.

As geological specimens are difficult to transport owing to their weighty character, it is desirable that only such as are new or doubtful should be collected. In all cases the gross weight of the specimens that are taken must be subject to the approval and control of the leader. Should it be found necessary to abandon any specimens, they should be marked off in the catalogue, and the date and cause of their being so abandoned stated. If fossils, sketches of them should, if possible, be obtained.

Note the probable thickness and relative geological position of different formations (conformable or otherwise) of igneous rocks, whether intrusive or contemporaneous. Boundaries of the different rocks or geological formations crossed on the line of route, should be marked on a map, to be supplied by the Leader.

Collect samples of stone tomahawks (specially to show the different kinds of stone that they are composed of) and ascertain if possible, where the natives originally obtained them, or where the stone came from.

Ascertain whether the natives of one tribe trade with other tribes for stone-chips, tomahawks, &c., and whether the natives possess any metals.

Zoology.

The Zoologist, in addition to all general observations which he may be able to make on all classes of animals that may occur to him, illustrated by sketches; is particularly required to ascertain, when possible, the fishes, shells, or articulata occurring in any stagnant or running waters met with, as these are of the highest interest in connection with questions of the geographical distribution of animals.

The larger fishes may be skinned by the removal of one-half of the fish, leaving the fins of the mid-line perfect. If then washed with a solution of corrosive sublimate in spirit, the specimen can be packed flat between papers without injury.

The soft Annelida and small Crustacea, as well as the soft parts of Mollusca, should be enclosed in vessels of spirits, the specimens separated by portions of linen cloth to prevent their being injured by shaking. Paper labels, written with black lead pencil, will remain uninjured with specimens so packed. As a general rule every specimen collected should receive one of a consecutive series of numbers (irrespective of the natural series of the objects) by which it should be indicated in the journal of the day, in which the particulars observed about it or illustrative sketches should appear.

Of Mammalia, the nocturnal ones, as bats, and the small murine forms (rats, &c.) are specially interesting, and should receive particular attention.

No opportunity should be lost to obtain, through the officer in charge of depôt, or through reconnoitring parties, additional specimens of rocks, fossils, minerals, and natural history.

It will be of vast importance to ascertain as extensively as possible, what relation the vegetation bears to its geological formation.

The accompanying general directions have been drawn up to assist the taxidermists in the collection and preservation of specimens, and should be given to the zoological collectors, and to each member of the expedition who may be able to render ssistance to the Zoologist.

GENERAL DIRECTIONS FOR THE PRESERVATION OF SPECIMENS OF NATURAL HISTORY.

The Human Race.

In cases where skeletons of aborigines cannot be procured, the *skulls*, along with the lower jaw, will prove of great interest and value to Museums. Any apparent malformation or peculiarities in the formation of the cranium of the various tribes should be carefully noted; obtain all the information possible respecting such occurrences, and whether produced by artificial means or otherwise.

Mammalia.

Remove all blood-stains if possible, and plug any shot holes or other bleeding wounds with tow, wadding, or rag; put a plug of moss or tow in the mouth to keep any blood or other matter from exuding. Note the *shape* and *colour of the eyes* and the fleshy parts, and the *sex*. Slit the skin open from about the centre of the belly downwards to the vent, but in the case of female marsupials, take care not to cut into the pouch; or this may be avoided, by cutting from *the chest*, between *the fore arms downwards*, and making an opening, in all cases large enough to extract the body; loosen the skin round it with the fingers, or handle of the knife, being careful not to use the blade more than is absolutely necessary; generally the skin will be found to be easily separated; now sever the leg from the pelvis bones at the body, leaving the tail attached to the body, by which it may be more easily slipped out of the skin; turn the skin back, *outwards*, and slip the tail out entire, the skin will then draw off over the back with ease; sever the fore limbs from the body with *the shoulder blades attached to them*, and the neck close up to the back of the skull (at the atlas vertebra); skin the head as far as the tip of the nose, remove all the flesh from it, take out the eyes, and remove the brains by enlarging, *if necessary*, the opening at the back of the skull; anoint it well, inside and out, with arsenical soap, and fill out the orbits with tow or wadding, &c.; clean the limbs, stripping the skin back as far as the paws: anoint all the bones and roll a little tow round them to make up for the amount of flesh removed; the tail often strips easily enough, but in some animals (as in the Platypus) requires literally

to be cut out, making an incision along one side of it. Anoint the skin inside well all over with arsenical soap, and dust it well with the powdered burned alum, now turn the skin back, and pull the limbs and tail into their original position ; open the palms of the hand and soles of the feet, remove the fleshy parts and rub in some soap and alum, remove the testes and fill up the skn to its natural size—if a female marsupial, fill out the pouch with a little tow. Allow the skin, after it has been prepared as directed to remain for a few hours, or a day, if the time can be spared, before filling it out, afterwards fill out* the skin to about the natural size, and sew up the opening ; tie the mouth shut, and pull up the wadding in the orbits, and adjust the eye-lids, but do not distend them. Anoint the eye-lids, face, ears, the fleshy parts of the feet, and the pouch, &c., with a solution of mercuric chloride and camphor in spirits of wine ;† hang the animal up in a dry airy situation, not in the sun, *until quite dry,* when, if required, to save space in packing the filling may be removed from the body, and the feet and tail folded over the belly, and the skin doubled up.

The smaller mammals, such as mice, rats, bats, and even the smaller species of native cats and bandicoots, are best preserved entire, in *strong spirits of wine,* to which a little arsenic has been added, taking care to make an opening in the abdomen to allow the spirits to enter freely. The body should be well covered with the spirit, and care taken that the stopper or cork of the vessel be made air-tight. A very good contrivance for large vessels is that known as a "*man-hole fastening,*" used for steam boilers, &c.

Birds.

When first obtained, push a small piece of cotton wool, tow, or moss into the throat, to prevent any liquid from escaping, and remove any blood from the feathers. Note the colour of the eyes, bill, legs, and feet. If the weather be hot and the bird cannot be skinned at once, it is advisable to brush the bill, eyelids (being careful to note the colour of the eyes first), the inside of the mouth, and other fleshy parts, as well as the abdomen under the feathers, and the vent, with the solution of mercuric chloride and camphor ;‡ this will prevent those parts being blown by flies, and, to a great extent, arrest putrefaction.

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* Tow, dry grass or moss, cocoanut fibre, unravelled rope, or the refuse tow from the rope works.

† Solution No. 1, see p. 55. ‡ Solution No. 1.

Before beginning to skin, for convenience sake dislocate or break the *first bone* (the humerus) *of the wings* about the middle, and then, after separating the feathers on the abdomen, open the skin from the lower end of the breast-bone, or from a little above it, down to the vent, being careful not to cut into the intestines; if there is much moisture or fat, dust these parts well with powdered lime, or better, plaster of Paris; detach the skin from the flesh on either side until you come to the knee-joints, which push up inside the skin, and cut through the exposed joints carefully; draw the legs back again, and detach the skin round on either side to the tail, cut through the vertebra at the tail, taking care not to injure the skin, which is very thin about this part; draw the skin over the back, holding the feathers clear of the body which may be powdered well with plaster of Paris to keep it from soiling them. The skin will now easily stip off as far as the wings, which must be cut through at the broken part or at *the first joint*; pull back the skin carefully over the neck until you come to the skull, and ease it gently over the head with your nails; detach the head, cutting the neck off with a *small portion* of the skull attached; pinch up the skin over the ears and pull it *carefully* over them as far as the eyes, the tough skin round which cut through, when it has been eased over the orbit, taking care not to cut the eyelid, detach the skin as far as the base of the bill, remove the eyes and flesh from the head, and the tongue, &c., and take out the brains through the opening enlarged at the back of the skull; anoint the head well with arsenical soap inside and out; fill up the orbits with a plugget of cotton wadding for eyes; roll up a piece of tow or wadding and plug the end of it tightly into the back of the skull, leaving a piece out of sufficient length to form the neck.* Now turn to the legs—remove the flesh from the bones, anoint them, and roll a little cotton wadding round them, leaving some of it over the end of the bone; clean the wing bones, but put no wadding round them, cut off the humerus, or the broken part of it, tie them a little apart by passing a string between the bones and drawing the wings together, but not too close, leaving a space of about one quarter of an inch in a bird as large as a thrush, and proportionately greater or less for other birds, as the case may be (in very small birds the wing bones may be tied close, just leaving room enough for them to play); clean the tail carefully and remove the fat and oil glands, anoint it well with the soap, and turn it back into its place with a small piece of wadding over it; soap the legs and wings and adjacent skin, and turn them

* Some taxidermists prefer to put the neck in after the skin is turned back; it is immaterial at what stage it be done, provided a good neck be formed.

back as near as possible into their original position; soap the remainder of the skin well all over, especially the neck, ease it carefully back over the skull, pulling the head through, assisted by the string previously passed and left through the nostrils; in some birds, as the larger cockatoos and parrots, and the stilts and avocets, &c., the neck being very small, the head cannot with safety be drawn through, it is advisable to open the skin at the back of the head or along the throat, and turn out the head through the opening, which can be sewed up afterwards.

Having turned the skin back, and pulled the head, legs, and wings into their original position, arrange the feathers of the head and ears as neatly as possible, with the point of a long needle, lifting up the skin here and there, and getting all smooth, pull up the wadding in the orbits to fill out the eyes, taking care not to distend it or *bulge the eyelids out;* shorten the neck by pulling the false neck of wadding down a little inside, place a piece on either side near the wings, and thrust a small piece up from the breast as far as the throat, to fill it out, and close the bill on the end of it to hold it in position, or by pulling the end of it the neck can be shortened at will; fill the body out to about its natural dimensions, or a very little more, to allow for the shrinking of the skin in drying, and arrange the wings *closed* on the sides, in the natural position; pull the legs down to their proper length, and take care not to elongate the neck; see that the bird is filled out enough, and sew up the opening—small birds need not be sewed up. Cross the legs, the tarsus of one over the tarsus of the other, and tie them; the right leg, as the bird lies on its back, should be crossed over the left, if the bird is a male, and *vice versa* for a female. The legs and feet, margins of the wings, the bill, orbits and nostrils, should be brushed over with the solution of mercuric chloride,* which may be repeated two or three times as the skin dries, if the specimen be a large one. Having settled the feathers, and *affixed a ticket,* with *date, locality, sex, colour of eyes, bill, and legs,* and a number referring to the note book, in which particulars should be entered as to the contents of the stomach, &c., the skin should be carefully pushed, head first into a *cylinder* of stiff paper (not funnel shaped) made just wide enough to contain it, and not small enough to cramp the bird—this keeps the wings together and the feathers smooth whilst drying.

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* Solution No. 1, p. 55.

Carefully ascertain the sex of each specimen by dissection. On removing the intestines the ovaries (if a female), resembling a small cluster of round seeds or beads, may be plainly seen, situated on the inner surface against the back bone; if a male, two small (usually yellowish) oval bodies will be found near the same place. Large birds require to have the last joint of the wings opened from without, along the inner margin, and any flesh removed, and the bone and skin well anointed with the soap, after which the incision may be sewed up, and the margins and joints of the wings and legs well brushed with the solution of mercuric chloride; should the legs (tarsi) of the birds be fleshy, as in some of the *larger* ducks and geese, and some of the eagles, or puffed out by decomposition, it will be necessary to slit them open along the under portion, down to the soles of the feet, and rub in arsenical soap or dry arsenic, bind the legs round tightly with strips of rag or tow, to bring the skin into its original position, until quite dry. This is, however, seldom necessary with the Australian species, except when decomposition has set in.

Fishes.

These are best preserved in strong spirits of wine (methylated spirit will do). Care must always be taken to have close *air-tight* fitting stoppers to the vessels containing the spirits. The specimens may be plunged in whole, after *first having a small opening made in the abdomen*, to allow the preserving fluid to enter the intestines. If they can be put in alive, all the better. If spirits cannot be obtained, strong brine may be used, to which a little alum may be added with advantage, and after the specimens have been in soak for two or three days, they may be taken out and well salted inside, and packed between layers of coarse salt, and fastened up tightly in a box or keg. In all cases where small specimens are placed among larger ones, or when they are packed for transit in fluid, each one should be rolled up separately in cloth or paper to prevent friction, without which precaution the fins and spines are likely to get broken, and the fish damaged.

Specimens too large to be conveniently preserved whole may be skinned, and the skin, with the head attached, be placed in the preserving fluid, or salted, or they may be only partially skinned —an opening being made in the abdomen (the intestines pushed aside but not removed), and as much as possible of the back bone and flesh should be taken out; this greatly reduces the bulk, and permits of a long fish being doubled up into a comparatively small compass.

Some of the larger fishes, rays, sharks, &c., may be preserved dry, after skinning. Make an opening in the skin below the pectoral fins, large enough to extract the body through, remove the intestines, cut through the back bone and flesh all round, until the skin is reached; remove each portion of the body by cutting through the fin bones inside, and pulling the skin back, after the manner of skinning eels; when doing the head portion, the cleaning of the gills and removing of the brain, and all fleshy parts, must be carefully attended to, and the whole of the skin, skull, and any bones that may be left, well anointed inside with arsenical soap, and powdered with burned alum; the skin may be then sewed up and the body filled out to its original proportions with *dry sand* or *dry* sawdust, which, when the skin is dry and ready for packing, may be shaken out to save room. Any parasites or intestinal worms, eggs or young found inside, should be preserved in spirits of wine.

The colour of the eyes and fins, and the general colouration of the specimens should always be noted; any information as to their capture, &c., or respecting their habits will be valuable.

Reptiles.

Lizards, Snakes, Frogs, Turtles, Crocodiles, &c.—These animals, when not too large, are best preserved in strong spirits; a small incision should be made in the abdomen to allow the spirit to enter. The larger specimens of lizards may be skinned in the manner described for mammals, but in filling out the tail, feet and limbs, the material should be cut up fine, to allow its being pushed into the small recesses, or dry sand or sawdust may be used. Care must be taken in skinning the tail—which cannot be stripped back, as in most cases with mammals—the skin of *the under side* must *be carefully slit up to the tip* and the tail removed, which can be replaced by an artificial one made of tow wound round two or three rushes. In skinning lizards, particularly the glossy species of *Tropidolepisma*, *Cyclodus*, &c., care should be taken not to break the tails, which are particularly brittle.

In preserving large specimens in spirits, the bodies can be skinned out through an incision made down the belly, the bones of the legs, arms, tail and head being left attached to the skin.

Snakes are always best preserved in spirits, but if it be desirable to skin some of the large boas and pythons common in the north, it may be done by making an opening in the skin just below the neck, a few inches in length along the belly, sever

the vertebra through to the skin, and turn out the body after the manner of skinning eels; do the same with the head portion, *leaving the skull attached to the skin*, removing as much of the flesh as possible, the eyes and the brains; anoint the head and the whole of the skin on the inside with arsenical soap, and powder it with burned alum; turn the skin back and fill it out with dry sand, &c., as directed for fishes; curl the body into shape.

Tortoises and *Turtles* may be preserved dry, the breast-plate being more or less severed along the sides, laid back, and the head, limbs and tail skinned and cured as before described for animals; the carapace (back) should be well cleaned and anointed with soap and burned alum, and the breast-plate returned to its original position, may be sewn or wired on, and the specimen set out to dry on a board; in the smaller specimens the bones within the body need not be removed, but cleaned carefully and left in their places.

In the case of large Alligators or Crocodiles, &c., the entire skeleton should be preserved, if possible. The flesh may be easily removed from the bones, and the head carefully cleaned; and after drying a little, may be packed in *dry* sawdust, grass or seaweed; if the whole cannot be secured, obtain the head at least.

Insects.

Beetles, Bugs, Cockroaches, Centipedes, &c., in fact almost all insects *except Moths and Butterflies*, are best killed in spirits of wine. Procure a wide-mouthed bottle with tight-fitting cork or stopper, half filled with methylated spirits of wine, and plunge the insects in as soon as captured. For killing beetles hot water may be used, if no spirits can be obtained. *Wasps, Hornets*, and *Flies* may be killed in the same way. Some beetles with powdery, hairy backs or thread-like appendages on their wing-covers, should not be put in spirits—they should be killed by chloroform, as advised in the case of Moths and Gnats, &c.

Insects, when killed, may be taken out of the bottles and dried on blotting paper or cloth, and then packed away with dry sawdust previously soaked in weak carbolic acid and well dried, in layers, in boxes, with a little crushed camphor sprinkled through the sawdust. The boxes should be fastened up tightly, and strips of strong paper pasted over the cracks. They will keep this way for months. Small packages thus prepared may be transmitted by post.

Lepidoptera, &c.

Butterflies, Moths, and soft-winged insects in general, should be killed by chloroform after first squeezing them across the thorax and pinning them to the bottom of a cork-lined collecting box. Most of the Butterflies, however, are easily killed, and a slight pressure under the the wings between the finger and thumb, is sufficient. Fat-bodied Moths, &c., should be stuffed; make a longitudinal cut on the under side of the abdomen, remove the intestines carefully and replace them by a small piece of wadding, and bring the edges together again. *Small Lepidoptera* may be first pinned against the substance they are found resting on, and then put in a box with chloroform, or a wide-mouthed bottle containing cyanide of potassium, inverted suddenly over them; the cyanide may be kept at the bottom of the bottle by a piece of gummed paper or wadding. Insects killed in this way must be pinned aud "set out" as soon as possible, as they dry and become brittle very quickly after death. Moths and Butterflies, Gnats, &c., may be kept for transmission, folded with their wings and the feelers between them together and laid in triangular shaped pockets of paper made by doubling a suitable sized square of paper into a triangular form, turning over and gumming together the edges.

Land Shells.

Look on the *leaves* and stems of trees and *large foliaged plants, especially after a shower of rain,* under leaves by the sides of logs and fallen timber, sometimes burrowing the rotten timber or in the ground beside it several inches deep.

Insects.

Many may be taken by having a bright light burning in the tents at night, and can be caught on the canvas, &c., or they may fly inside.

If large caterpillars are found at the *depôt,* they should be kept in a box with gauze over it and *fed* on the plant on which they are found, until they turn to the chrysalis.

Land Shells

Are found most abundantly in the alluvial wooded regions, especially upon hill-sides, where during the day they are concealed

under fragments of fallen trees, bits of bark, stones, &c., sometimes under leaves or in the tufts of rank growths of moss. Some are found on the trunks of standing trees, also on the under sides of the leaves, others found burrowing in the soft earth.

Fresh-Water Shells

Are found along the banks of rivers and creeks sticking to logs, stones, leaves and aquatic plants; also in small pools, swamps and rivulets. All species or specimens must be killed with boiling water poured over them, then extract the animal with fine bent wire. All bivalves must be tied together when dry, then put away in boxes with any packing, such as moss, so as to prevent them from getting broken.

Shells.

Shells, or the calcareous coverings of molluscous animals, only require cleaning. The animals should be allowed to come partially out of the shell, and then suddenly dash boiling water over them, and leave them in the water for a few minutes, or more according to the size of the specimen and thickness of the shell, the animal can then easily be picked out with a pin or bent wire. The horny or calcareous *mouth pieces*, or *opercula*, which close the openings of certain shells, should always be preserved and gummed inside the shells to which they belong. *Bivalve shells* may be scalded with hot water and then cleaned, but in no case allow the animal to *rot* out, as in most instances during decomposition an acid is formed which corrodes and disfigures the pearly lining of the shell. They may also be packed up in *dry sand* without removing the animal, which will dry up, but may afterwards, at a more convenient time, be softened in water and removed.

General Remarks.

Wounded birds and animals may be easily killed by pressing them tightly across the windpipe, In the case of smaller birds, place the thumb and second finger under the wings on either side and the forefinger in the hollow of the chest, just over the windpipe, press all tightly together for a minute or so, until you find that respiration has ceased.

The collector should always be careful to note down the *color of the eyes and fleshy parts* as soon as possible after the specimen is captured. The locality and situation in which the

animal is taken, with a few remarks as to the style of the country and the nature of the vegetation, geological characters, and elevation, &c.; also the vulgar, local or native name, and the rarety or commonness of the animal, and any information respecting its habits, &c., *being particular about the dates and season of the year.* The color and shape of Seals, Porpoises, Whales, Dugongs, &c., should be carefully noted, and a sketch made of their forms, whenever opportunity offers. In cases where the skins of these animals cannot be cured, the skeleton or at least the *skull* should always be preserved, being careful to note the sex—the females should be carefully opened in search of the fœtus, which should be preserved in spirits.

Should the collector obtain what he believes to be a scarce or rare animal the skull should not be cut or the opening at the back part enlarged; with a little trouble the brains may be extracted through the natural opening.

In preparing skeletons of animals for transmission to Museums, if you have a choice of the animals, select the largest and oldest, discarding those with fractured bones, if you can get better. All the flesh should be carefully cut off, and the bones made as clean as possible, the head, arms, legs, and tail may be severed from the body, the back disjointed in convenient sized pieces, and the parts thrown into a tank or tub of cold water, with a few handfuls of salt, or about two or three ounces to the gallon, the salt and water renewed every second or third day for about a week or so; the remainder of the flesh can then be removed, and the brains extracted through the opening at the base of the skull, which must not be enlarged or cut in any way, and the bones when dried packed up.

When none of the chemicals aforementioned can be obtained, the specimens may be skinned in the way described, the skin and the bones carefully cleaned, and the bodies filled out with fresh dry charcoal, or wood ashes, crushed into a coarse powder, to which may be added with advantage *grated or bruised "galls,"* the excresences found on the twigs and leaves of many of the gum trees (*Eucalypti*); hang the specimens up in a dry airy place till quite dry.

Receipt for making Arsenical Soap.

White Arsenic	1 lb
Common or Hard White Soap*	1 lb
Salts of Tartar	4 oz.
Lime in Powder	3 oz.
Camphor	2 oz.

* Soft Soap must not be used.

Cut the soap into thin slices and melt it in a saucepan over a slow fire, when melted add the Salts of Tartar which will reduce the mass into a creamy consistency, take it off the fire and put in the arsenic, and stir it up well, add the lime, and then the camphor either reduced to a fine powder or dissolved in a small quantity of strong methylated spirits of wine, stir the whole up well, and pour out into earthenware jars to cool; if it is required very hard to pack up for travelling with, it may be poured out into *porous* vessels, when cold it may he cut out and pressed together into cakes like common soap, and when wanted for use, softened with a brush in a little water.

Solution No. 1.

Mercuric Chloride*	¾ oz.
Camphor	1 oz.
Spirits of Wine	1 pint

Dissolve the camphor in methylated spirits with the mercuric chloride, shaking it up occasionally until it is all dissolved.

General Remarks.

The brains of many of our Australian animals are interesting and valuable to many of the naturalists, and should therefore be collected whenever opportunities occur.

Having removed the head of the animal with at least two of the neck vertebræ attached, make a straight cut from the back of the head over the forehead and down to the nose, throw the skin back on either side as far as the upper row of teeth, remove the ears and any flesh that may be in the way, but not the eyes; take a small sharp dissecting saw, or a tenon saw and cut carefully and *not quite through*, the bone of the skull round the upper part and across behind the ears and orbits completing the circle; now with a sharp strong knife, *held as if to cut a pencil*, finish cutting through being careful not to stick the point into the brain, prise up the piece from time to time as you cut along to ease the cap off the brain and skin just under the bone, when the cap is removed either in one or more pieces, a membraneous covering called "*dura mater*" will be seen. Cut this through carefully over the centre and sides of both hemispheres, so as to allow the spirit to enter freely, now immerse the

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* Corrosive sublimate.

whole in the spirit or preserving fluid to harden it; after a few hours (10) remove it again, take off the *dura mater* carefully and slightly open the hemispheres, shake the brain a little forward from the base of the skull to allow the liquid to penetrated behind to the very base where the cerebellum is situated; as the brain will be a little shrunken and hardened you may remove the thin membrane called the "*pia mater*," which will be found immediately over the brain and between it and the first covering called *dura mater*, replace the cap of bone, tie it in its place again, and keep the whole covered in strong spirit.

The brains of *aborigines* so prepared would be of great value.

Skeletons of the aborigines are much wanted, and for the benefit of the collectors, annexed is a list of the *separate* bones of a complete human skeleton.

Bones in the Human Skeleton.

Vertebral Column.

Neck, 7 (cervicals)	7
Back, 12 (dorsals)	12
Loins, 5 (lumbra)	5
Sacrum and coccyx, 2	2

The twenty-two (22) bones of the head or skull are considered here as one piece (1), and the lower jaw as another (1). In the upper and lower jaws, there should be 32 teeth in all.

Molars	$\frac{3-3}{3-3}$	Three *on either side*, above and below.
Bicuspids	$\frac{2-2}{2-2}$	Two on either side, above and below.
Canines	$\frac{1-1}{1-1}$	One ditto ditto ditto, ditto ditto ditto
Incisors	$\frac{2-2}{2-2}$	Two ditto ditto ditto, ditto ditto ditto

Tongue bone (Hyoid) shaped something like the letter U ..	1
Breast bones (Sternum).—Two *large* and one *small* piece, *ossified with age*	3
Ribs, 24—Twelve on each side	24
Collar bones (2) one on each side	2
Shoulder blades (Scapula) 2	2
Arm bones, 3 each (humerus, ulna (2), radius (3)	6
Bones of the hand—*Wrist* or carpal bones, 8 in each wrist	16
Middle of the hand, or *Metacarpal* bones, 5 each	10
Fingers, 3 each = 12 / Thumb, 2 .. 2 } = 14	28
Under the thumb joint 2 sesamoid bones	2
Pelvis or hips, 2 bones	2

(In the young divided into 3 pieces.)

Leg Bones—

Femurs, 1	each	..	..	..	..	..	..	..	2
Tibia, 1	,,	..	..	..	..	..	..	..	2
Fibula, 1	,,	..	..	..	..	..	..	..	2
Knee cap, 1	,,	..	..	..	..	..	..	..	2

Foot Bones—

Ankle, 7	..	..	..	..	..	..	..	.. 14
Metatarsus, 5	..	..	..	..	..	..	..	.. 10
Sesamoid bones under the joint of the great toe*							..	.. 2
Toes.—Great toe 2, 4 other toes, 3 each—12							..	.. 14 = 28

Skulls of aborigines found around native dwellings are of little value, but authentic skulls may be obtained from the graves of the natives of each tribe.

Crustacea.

The larger kinds, such as lobsters, crabs, crayfish, &c., and some of the large swimming species, are usually obtained in deep water by means of *lobster pots* or *baskets*, and traps of various kinds, nets, &c., &c.: also by dredging and trawling, and in the seine and trammel nets. They should have an incision made under the carapace to allow the spirits to penetrate into their bodies.

Many may also be obtained in fresh water, or even *on land*, as the robber crabs, and hermit crabs, or in the streams, as the freshwater crayfish, &c.

Small crabs, prawns, shrimps, &c., are obtained both from shallow and deep water—in the former situation by wading and turning over stones at low tides on the reefs; in the later by means of the dredge. Many small crustacea are found burrowing, or in the canals of sponges &c.; others in the sand on the shore, —under stones and masses of decaying seaweed or dead bodies; some burrow in mud also, others live in seaweed on the rocks, or under them; others (Pinotheres) inhabit large shells (living), such as the large Tridachna or clam shells, and the *Pinna*; some few in the interior of large sea urchins: a few small forms inhabit dead medusæ.

Small species inhabit stagnant pools, both in fresh and salt water.

All may be preserved by throwing them into strong spirits of wine. The smaller ones should be put into separate tubes or bottles. In every case attach a *label written with a lead pencil on strong paper*, or a tin-stamped number. Enter in your note-book a corresponding number and as much information as possible

* The sesamoid bones are very small, and easily overlooked.

about each species, and the *nature* of the *locality*, and circumstances under which it is found. Also, its native name if that can be ascertained.

Sponges

On the contents of the dredge being emptied, if the sponges are mixed up with the mud, rinse them out in salt water, *slightly shaking*, but not *squeezing* them. Put them into strong spirits as soon as possible. On no account let them get dry, unless you want them for the skeleton only, when the *horny* kinds can be washed and squeezed out in fresh water, put in a shady, airy place to dry, and packed in boxes.

Echinodermata.

All these, such as sea eggs, sea urchins, sea stars, &c., &c., may be thrown into spirits alive. If no spirits are to be had, wash them in *fresh water* to get the salt out, and let them soak an hour or so; dry them in the wind. Care must be taken to *get all the salt out of them*, otherwise they will usually fall to pieces and become useless.

Sea eggs, in the absence of spirits, should have the "*lantern*" or mouthpiece containing the teeth, &c., cut round and taken out carefully; then the inside should be washed and the *contents shaken* out. Replace the "lantern" and set the specimen away to dry. In packing *carefully protect the spines* with paper or shavings, *rubbed* grass or any soft substance, or roll them in paper and pack in *sawdust*.

Sea worms, &c., &c., ascidians, sea anemones, &c., &c., and all soft marine animals should be washed out carefully if mixed with the mud or débris of the dredge, and placed for a few minutes—3 to 5—in a saturated solution of corrosive sublimate in water to harden; then take them out and wash them in weak spirits for a few minutes; afterwards put them in strong spirits and cork them up tightly.

All marine specimens should have the labels of strong paper written on with deep black lead pencil, and put in the bottle with the specimen—*do not use metal labels for these.*

Large specimens of sea-stars, &c., which cannot conveniently be put in spirits, can easily be cured by *washing out the salt* and drying as above advised; pack up carefully and keep dry, in *rat*-proof boxes. (A little spirit poured over them will help to dry out the water.)

In dredging, respecting every haul, note the depth and locality, and bottom and surface temperature *of the water, and the time of day;* also the nature of the bottom, whether sandy, mud, mud and clay, shells and sand, etc., etc., as the case may be; *and keep always* some of the fine shell sand and *debris* for future examination: this can be put in small *half-bushel* bags, and let dry.

MARINE MAMMALIA.

Whole Skeletons or *the skulls and lower jaws* of all species of *whales* should be collected. These are frequently found washed up on the sea beaches.

Skeletons of *porpoises* and *seals*, &c,, are also desiderata.

The smaller kinds can be skinned, and the skins salted and packed in strong brine, the skeleton cleaned and dried.

In the case of *seals*, prepare in the same way as any other mammal and save the *skeletons* also. Use plenty of burnt alum and *paint* the *face, flippers and feet well several times while dying* with a strong solution of corrosive sublimate in spirits of wine.

THE FOLLOWING ARE AMONG THE SPECIAL DESIDERATA OF THE AUSTRALIAN MUSEUM.

MAMMALS.

Skins and *skeletons* whenever both or either can be obtained.

Look for small *marsupial rats* and *allied forms*. There are several small "*native cats*" and small kinds of opossums, &c.

"*Hedgehogs*" or "porcupines," (Echidna). There are two or three species. Cut open the belly and put the whole animal in a *large quantity* of strong spirits. If plentiful, others may be skinned and cured in the ordinary way. Always save the skeletons. Look for a large species with a very *long snout*, it is much larger than the N. S. Wales species.

A *large bandicoot* (Perameles Broadbenti).

Tree kangaroos and small scrub wallabies.

Skin and *skeleton* and some *skulls* of the *wild pig* of the inland tribes.

Skins, skulls, and skeletons of *Aborigines*, males and females.

Authentic skulls of aborigines from the *graves* of the natives of each tribe, also the *whole skeleton* if possible.

Skulls with the hair left on of *any mammals*.

Birds.

Long curved billed paradise birds.

Golden orioles.

Twelve wired bird of paradise.

Nests and eggs of any species with the birds belonging to them.

Very small parrots feeding in fig-tree, &c.

Cassowaries, their eggs, and their skeletons.

There are some very small Parrots, about *three inches* long, worth looking for. They creep about the stems of the fig and other fruit trees, and being all green on the back, are not easily seen.

Be careful about sexing all birds.

Large *Landrail—can scarcely fly.*

Black Hawk, with some white markings on breast; very *thin, weak bill.*

Nests and eggs of *Paradise* birds.

Nests and eggs of *Bower* birds.

Hawks and *Owls of all kinds.*

Long-tailed honey-eating Parakeets.

Fishes.

Particular attention should be paid to *fresh water fishes,* such as are obtained from *inland* water-holes, lakes and lagoons Those of the *sea* are not of so much importance.

INSECTS.

By A. Sidney Olliff.

Assistant Zoologist, Australian Museum.

The following method of preserving coleoptera or beetles, is the one generally adopted by collectors who are travelling from place to place, as it not only kills the insects but preserves them in excellent condition as soon as they are captured. The specimens when collected, should be placed in a wide-mouthed bottle, about one-third filled with sawdust, containing a small piece of cyanide of potassium, which, it should be recollected, is a deadly poison; they will then die instantly, and without injury to themselves. The sawdust should be sifted through muslin, and the chips rejected, and should if possible, be of some light wood containing little colouring matter. When the day's collecting is over, the insects contained in the collecting bottle, should be transferred to a tin canister or stock bottle, which has been prepared by placing a layer of sawdust at the bottom, similar to that used in the collecting bottle. The sawdust should be slightly damped, not soaked, with a mixture composed of nineteen parts of methylated spirit or benzoline, and one part of carbolic acid. Another layer of sawdust should then be added, then another layer of beetles, and so on alternately until the tin is full. Tin canisters are to be preferred on account of their being free from the danger of breakage, but any kind of wide-mouthed bottle, such as a pickle jar, will answer every purpose if it is provided with a tightly-fitting bung. If this plan is from any reason found to be impracticable, the beetles may be killed by being placed in a bottle with a drop of chloroform on a piece of blotting paper or cotton wool. Lastly, the beetles, with any other insects possessing hard integuments, can be preserved in alcohol.

Butterflies should be killed without removal from the net by a sharp nip applied to the muscles which are situated at the base of the wings with the finger and thumb. If this is done when the wings are over the back of the butterfly, very little evidence of the rough usage will be left. Thick-bodied species are best killed by means of a killing bottle, which may be made by taking a wide-mouthed bottle with an air-tight bung and placing three or four pieces of cyanide of potassium at the bottom, and over this a thin layer of plaster of Paris, mixed with a sufficient quantity of water to make it of about the consistence of thick

cream. A few pieces of cyanide with a pad of blotting paper tightly pressed down over them will answer very well if the plaster of Paris cannot be obtained. Moths can also be killed in the fumes of ammonia, chloroform or benzine. Butterflies should be placed in paper envelopes, folded in a triangular form, but care must be taken that their wings are brought in contact over their backs. A number of these envelopes packed in a biscuit or similar tin, will travel any distance with perfect safety. All moths should be pinned through the centre of the thorax, and large species should have the contents of the abdomen removed. This is readily done by making a longitudinal incision on the underside of the body, removing the contents, and substituting a little cotton wool.

The small moths (Micro-Lepidoptera), to which I would draw particular attention, must be pinned. They should be brought home alive in pill-boxes and killed in the cyanide bottle, or the boxes (having previously had a small hole bored in the bottom), may be placed in a tin canister with a small piece of sponge or blotting paper moistened with chloroform or strong liquid ammonia and left until the following morning, when they should be pinned. The best way of collecting these little moths is to disturb leaves and low-growing plants, securing them as they fly out and placing each specimen in a separate pill box.

Diptera (flies), Hymenoptera (bees, wasps, &c.), Neuroptera dragon flies, mayflies, &c.), and all pubescent insects should be pinned. They may be killed in the same manner as the moths.

Orthoptera (grasshoppers, walking-stick insects, &c.) and Hemiptera (bugs) are best preserved in spirit, although the latter may with safety be packed in sawdust with the beetles.

INSTRUCTIONS FOR BOTANIST.

For the purpose of elucidating to the fullest extent the phytology of the country to be explored, the Botanist should keep a diary, in which the principal botanical features of the country should be noted, and into which any plant, either remarkable or observed for the first time, should be introduced under the same number or designation by which it is distinguished in the herbarium.

To the specimens which will be collected, and which should be pressed into paper always immediately, and dried as speedily as circumstances will permit, a label should be fixed, containing a note of the day of collecting, the habitat of the plant, the soil of the locality, the color and perhaps odor of the flower, the nature of the bark and of the wood of any arboreous species, the size of the plants, and any other characteristics which cannot be derived from the examination of the dried specimens.

These, when dried, it will be desirable should be well secured against pressure and moisture, and the thus formed collections should be forwarded to the Hon. Secretary of the Exploration Committee, always at the very earliest opportunity afforded for transmission.

To such selections of botanical specimens might be added any well-matured seeds collected on the journey, which should either be numbered corresponding to the specimens in the herbarium, or be accompanied by leaves, flowers and seed vessels, for the purpose of recognizing the species.

Samples of gums, resins, barks, and any other vegetable substances, likely to be technical, or economical, or of medicinal use, should be gathered and labelled in such a manner as to facilitate specific determination.

No opportunity should be lost to obtain, through the officer in charge of depots, or through reconnoitring parties, additional specimens of plants and seeds.

Particular attention is directed to the necessity of closely examining the Pandani and Palms which are likely to be met with within the tropics; and since it will be difficult to procure the large fruits of the former, and since the determination of the species greatly depends on the habit of the plants, it would be of great advantage to have, through the artist of the expedition, sketches of the outlines of these rare trees secured, and the flowers and fruits fully delineated.

Of any plants suspected to have been deleterious to animals, such a quantity should be dried as will suffice for chemical analysis, and any experiments to be instituted thereafter.

Of plants which may be of utility for food or otherwise, or which are drawn into use by the natives, more particularly, information is sought.

The following general directions, which have been drawn up by Baron Sir Ferd. Von Mueller, K.C.M.G., F.R.S., M.D., &c., &c., for the collection and preservation of botanical specimens, should be given to the Botanical Collector, and to each member of the expedition who may be able to render assistance to the Botanist.

1. To endeavour to secure as many different kinds of plants as circumstances will permit, in order that the fullest insight into the vegetation of any of the districts, traversed by the expedition, be obtained.

2. To collect each phanerogamous plant, as well in flower as in ripe fruit, whenever and wherever possible, and under no circumstances, to miss collecting a plant when in fruit only.

3. Not to pass even the minutest plants, but in the case of mosses, to endeavour to obtain fruiting specimens.

4. Not to miss collecting seaweeds and fresh-water weeds, whenever the opportunity presents itself.

5. For securing proper material of palms, it will be needful to preserve a leaf or portion of the leaf with part of the stalk, but to add a flower-spike or a portion of it, also some ripe fruit. Leaf, flower, and fruit of each species, to be carefully packed together in strong paper, and then to be dried in the sun-warmth or at a fire ; each sort of palm to be numbered, and a note to be added at once to each species regarding height, nature of stem, place of flowers, *between* or *below* the leaves, and any other striking peculiarity, such as could not be ascertained from the dried specimens.

6. To secure in the same manner, specimens of any *bamboos*, which might happen to be *in flower*. A small piece of the stem in these cases also to be gathered, and some leaves with basal sheet.

7. To secure of very bulky specimens only, 1, 2 or 3, in all other cases, several.

8. For hastening the drying of plants, so as to save time, the specimens, after being put and pressed in paper, to be laid out *soon*, in thin sets (plants and paper together with cross string) in the open air or near a fire, to halve the set (as in shifting of cards) after an hour or two, so that that the moist inner specimens and paper come outward, and the outer drier portion inward ; this process to be repeated till the specimens are quite dry. Time and convenience for shifting plants from moist into dry paper being, during travelling, rarely available. Under no circumstances to allow specimens to rot.

9. Paper used for drying seaweeds cannot be used subsequently for drying any other kinds of plants.

10. Large dry fruits to be wrapped up carefully in strong paper, and to be numbered correspondingly to the flower and foliage specimens in the general collection; large succulent fruits to be preserved in methylated alcohol, small labels to be attached to them indicative of the number to be assigned to the flowering and leafy specimens in the general collection.

11. Parcels of specimens, when *perfectly dry*, to be wrapped up at once into wax cloth or some other fabric impervious to moisture, of which material a *large quantity*, as well as of printing and packing paper for drying plants, should be provided.

12. Some kerosene to be dropped between the dried specimens before packing the parcels into wax cloth, with a view of keeping off insects of all sorts, and such parcels, if possible, to be packed into water-tight boxes, which might be provided purposely at the outset of the expedition.

13. All smaller plants, including ferns, to be collected with their roots; of ferns, fruiting specimens only to be gathered and *no preference* to be given to ferns for filling the collecting paper, as they will mostly prove identical with Indian species, though each kind should be present in the collection, with the object of proving which of the South Asiatic species do occur in New Guinea. Also tree ferns (or fern trees) to be marked as such on the accompanying label, and to be noted what are the particular characteristics of their stems.

13. On the labels to be noted, in the case of any specimens, their precise locality, the date of collecting, the color of the fresh flowers, any scent of the flowers. Further, the color of fresh fruits, should they be succulent; also, in the case of trees, their approximate height, the outer appearance of their bark, and should a tree be felled, the nature of its wood.

14. When firewood for the engine, &c., is cut, a piece of wood to be secured of any kind of tree, from which flowering or fruiting branchlets can be obtained for identification. Timber specimens without such accompanying flowering or fruiting branchlets, will prove of little or no value.

15. When from friendly natives wood implements, wood weapons, nets, cloths, fishing lines, &c., are obtained, an endeavor should be made to trace these articles to the trees, shrubs, bamboos, grasses, rushes, &c., affording the material, and a corresponding label to be fixed both to the article in the ethnological collection, and to the explanatory botanic set of specimens.

16. When steep mountains are to be ascended, or jungle to be traversed, *baskets* to be carried, into which *all sorts* of specimens in flower and fruit are to be put expeditiously, without paper, as such specimens will keep for about a couple of days, particularly if collected in dry weather. This will save the trouble of carrying much paper, which can be left at the camp: and if men are available as *carriers*, they could carry each a basket on his back tied with straps. Provisions could be carried in such baskets up the mountains; and the empty baskets to be filled with plants as specimens on the way down.

17. It is of the greatest importance to muster as many different kinds of distinct species of plants as ever possible, as the result of the expedition, so that a *creditable* enumeration can be published therefrom; thus all sorts of fungi should also be collected, the hard kinds requiring simply drying: the soft kinds will need quickly to be immersed in methylated alcohol, from which they should be removed after a few hours, and then be simply dried, a note of the fresh colour to be attached to each kind.

18. Seaweed of tender or gelatinous structure should be floated out on writing paper, and only be pressed and covered by blotting paper when nearly dry: rough kinds of algæ need merely be dried on a sunny place, or near a fire, till quite crisp, and can then be simply tied together into a parcel, as they will be re-soaked and prepared here afterwards, so that *no time needs necessarily be spent* on rough seaweeds in preparing them during the Expedition. Even green slimy masses in rivers, brooks, and swamps can be floated out on writing paper like tender seaweeds.

19. Careful inspection of bark and roots should take place for lichens in fruit: some are mere little specks of various colour, each sort representing, however, microscopic characters of its own.

20. In a wet tropical country blotting paper can only exceptionally be used for drying botanic specimens, as the mere getting wet of one corner of the paper will draw by capilarity, quickly, the humidity through the whole. A good kind of printing paper is the best for drying plants in the tropics: of this several reams should be available, and one ream or two of strong packing and writing paper. To spin out the supply of paper as far as possible during the journey's operations, it will be needful to pack closely together the dry plants whenever ready for wrapping up into parcels, so that a portion of the paper could be used again. Pasteboards should also be available to some extent, for pressing and packing botanic specimens,

21. It is a mistaken notion to rely on bulbs, tubers, seeds. and living plants to be carried away instead of flowering and fruiting specimens. Such tubers, seeds, seedlings, shoots, &c., *may*, in conservatories *not flower* for years, and seldom ever produce mature fruits in culture.

22. When the land-party reaches the temperate and cold zones of the higher mountain regions the *most strenuous efforts* should be made by *all members of the party* to make as large a collection of flowering and fruiting specimens of the various trees (probably oaks, cypresses, junipers, &c. among them), also of the various shrubs (whether ornamental, as rhodendrons, &c., or not showy), so also of all rushes (in fruit), grasses, herbs, &c.; the approximate elevation of each of their places of growth to be carefully noted on the label. If, under the urgency of circumstances, only small specimens of *each sort* can be brought, it will suffice, provided the *specimens are so* SELECTED *that a photographer can work with them.* The higher the elevations in the ranges, the more numerous and interesting will be the new forms.

23. If any particular insect or bird &c. lives on any particular plant, a note to that effect should be made on the label. Entries of such kind in the diary should, as speedily as possible, be copied out, and placed with the specimens at once, as otherwise, subsequent confusion is sure to occur.

24. Even on the sea-shores or river-banks specimens of the common mangroves in flower and fruit should be secured, as well as of any other widely distributed series of plants, inasmuch as such common plants may *not yet have been* recorded from New Guinea; and as the specimens, if properly labelled, will afford us the means of recording new particular localities, which will always be done under the finder's name.

GENERAL INSTRUCTIONS.

The Leader, officers and scientific staff shall each keep a diary in duplicate for the Geographical Society, and shall each record not only matters concerning his own special department but all that he deems of interest. The duplicate copies should be placed with the camp equipment, and never be taken out when making explorations away from camp.

The diary is to be kept regularly, and all observations made during the day are to be entered before the next day, and as soon as possible after the camp is pitched for the night, and the necessary duties connected with camping, attention to stores, &c., are completed. This is to be in all cases determined by the leader.

Tracings or plans of the route should be obtainable from the Leader, upon which to mark the position of observations. To effect this rapidly, the daily observations in the journal should be numbered, and a corresponding number placed on the map at the point where the observation was made, or to which it refers.

The Nautical Sub-Leader shall keep a similar diary, recording his daily work and experience.

Observations upon the natives, and the physical features, geology, fauna and flora of the country, should be copiously illustrated by sketches and photographs, with the number of the specimen or observation in the journal to which they refer, attached.

All views should be numbered and dated with the time of day, the position whence they were taken marked on the map, and the compass bearing, and estimated distance, given of the extreme points embraced in each view.

Scientific observations, or work that would cause hindrance, or otherwise interfere with the progress or necessary work of the Expedition, must never be undertaken if contrary to the instructions of the Leader.

All specimens, journals, sketches, photographs, maps, or other documents to be exclusively the property of the Geographical Society, and on no pretence whatever are either specimens or copies of the said documents, &c., to be given away or forwarded privately to any person, or even officially, except through the Leader; although it is intended that each observer should, on publication of the results of the Expedition, receive the credit due to him for his observations.

All scientific or other documents, journals, &c., relating to the Expedition to be at all times accessible to the Leader.

In the event of any occurrence by which a member thinks himself aggrieved, it shall on demand be entered in the Leader's diary, with the attested statements of the member in question, as soon as possible. All such matters shall be dealt with by the Administrative Council after the return of the Expedition to Sydney. Every member of the party shall abide by the decision.

Each member of the Expedition shall receive a copy of the above instructions, and he is expected to render every assistance in his power to his colleagues when opportunity offers.

Special Memoranda.

Always make natives march in front.

Never land in face of a party of natives, who are without their women and children.

In making a movement, or marching before natives, always have a covering party.

ADDITIONAL INSTRUCTIONS SENT BY LETTER AND TELEGRAM TO THE LEADER.

June 13th, 1885.

Herewith you are furnished with memoranda relative to (1) the route from Thursday Island to the Aird River: (2) the necessity of taking interpreters: and (3) the best ways of obtaining the goodwill of the natives. Of some of these suggestions the Council think highly. They request you will not fail to obtain one or more interpreters, and take them with you. Whilst considering it wise not to hamper you with definite instructions on the other points, they yet request you to give your most serious attention to them, and not to disregard them without ample reasons for so doing.

The memoranda have been drawn up by John F. Mann, Esq., and Law. Hargrave, Esq., both of whom have the advantage of speaking from experience gained in New Guinea itself, a fact which gives great weight to their opinions.

June 13th, 1885.

At the eleventh hour Mr. W. Hastings Senior, and Mr. Arthur J. Vogan have, with your approval, been permitted to join the Expedition. No agreement having been made with these gentlemen, they will please sign the ship's articles.

The Council do not wish the clause in the instructions confining exploration to British territory, to be too literally observed. If there is at any time good reason to expect important discoveries might be made at a short distance over the boundary line, you will be at liberty to cross the line for that special purpose.

June 15th, 1885.

(Telegram.) Captain Everill is specially requested to make sure that no intoxicants are taken on board the Bonito by any of the party.

June 15th, 1885.

(Telegram.) It is announced that a German expedition is to shortly start to explore German New Guinea. This should put our men on their mettle: at the same time it will show the wisdom of respecting the boundary line, and using the special permission to cross it with the utmost discretion.

June 18th, 1885.

As news of the expedition will be anxiously looked for by the friends of those who are taking part in it, will you have a list prepared and sent from Thursday Island, of the names and addresses of persons to whom the various members of your party may wish information to be sent. In the event of news being brought by the "Advance," or coming through other channels, the explorers may be assured of their friends being fully informed thereof.

Of course you will understand that the list must include the friends of the engineer and the seamen, and you are requested to inform these men that the Society has received, and been much gratified by, the report you have been able to send of their ability and conduct on the way to Brisbane.

The Society will be equally ready to send information to Batavia—should it be so desired by the Malays.

June 18th, 1885.

You are desired to be exceedingly careful with reference to the transmission of news of discoveries made in New Guinea, and if you are able to send reports by any vessel during the progress of the Expedition, they must be under seal and addressed to the Secretary. This is necessary to ensure the news being distributed to the various Governments and newspapers at one and the same time.

PROVISIONS, STORES, ARMS, &c., &c.

PROVISIONS.

50 lbs Tea
112 ,, Coffee
86 ., Cocoa
620 ,, Sugar
385 ,, Biscuits
1000 ., Flour
6 Kegs Corned Beef
858 lbs Tinned Beef and Mutton
5 Kegs Cod Fish
2 Cases Ling
1 Keg Molasses
2 Tons Rice (for the Malays)
355 lbs Bacon and Hams
6 Cases assorted Preserved Meats and Fish
48 Tins Condensed Milk
36 One-lb Tins Butter
70 Two-lb Tins Butter
77 lbs Currants
36 lbs Sultanas
72 lbs Dates
2 dozen Boxes Figs
12 dozen Tins preserved Fruits
4 Tins (each 56 lbs) Preserved Potatoes
6 Tins (each 16 lbs) Preserved Vegetables
40 lbs Corn Flour
7 Packages Curry, Pepper and Mustard
1 dozen bottles Sauce
150 lbs White Beans
50 lbs Split Peas
50 lbs Lard, in tins
70 lbs Oatmeal
1 Bag Salt
224 lbs Soap
207 lbs Tobacco
84 lbs Candles
2 gross Damp-proof Matches
7 gross Safety Matches
8 gallons Vinegar
25 tins (2 oz) Liebig's Extract
12 tins (4 oz) ditto

Total Cost of Provisions, £255.

10 boxes Tea, the gift of Messrs. Griffith Bros.
1 case Hop Bitters, the gift of Messrs. Montefiore, Metcalfe and Co.

GENERAL STORES.

24 Mosquito Nets
12 Blankets
12 yards Waterproof Macintosh Sheets
98 yards Grey Calico
12 Men's Serge Trousers, for the Malays
12 Men's Serge Shirts, ditto
2 cases Collins' Axes
1 case Weed's Hunter's Hatchets
3 "Lightning" Cross-Cut Saws
24 Pannikins (one pint each)
3 dozen Camp Kettles
2 dozen round Tin Meat Dishes
1 ,, tin Dinner Plates
1 ,, Knives and Forks
2 ,, Johnson's Sheath Knives
2 ,, Leather Sheaths for same
1 ,, Williams' Butcher's Knives
2 ,, Metallic Tape Measures
6 "Vagabond" Tents
16 Flasks, with cups and slings
2 dozen White Duck Haversacks
3 ,, Flints and Steels

MEDICAL STORES AND COMFORTS.

60 oz Quinine, &c.
Various Medicines, selected by Dr. Belgrave and the Surgeon of the Expedition, value £27
1 case Brandy
1 case Gin
10 gallons Colonial Wine
28 tins Arrowroot

STATIONERY.

Note Books, Charts, Commercial Code, Log Book, Paper, Envelopes, Pens, Ink, Pencils, &c., value £25.

STEAMER'S OUTFIT.

Life Buoys, Signals, Patent Log, Lanterns, Steam Whistle, Flags, Tallow, Paints, Oils, Cotton Waste, Brooms, Tools, Nails, and other requisites for Engine Room, Deck, Cabins, &c. ; total cost, £120.

WHALE BOAT.

Cost, all complete, with awning, &c., &c., £45.

TRADE.

5 dozen Hatchets
4 ,, Pocket Knives, assorted
3 ,, pairs Scissors
6 ,, Iron Table Spoons
½ ,, Sportsman's Knives
2 ,, Fishing Lines
100 ,, Limerick Fish Hooks
Quantity of Iron—sheet and hoop
3 cwt Galvanized Iron Wire
2 pieces (121 yards) Prints, "Island Fancies"
5 pieces "Turkey Red" Calico
2 pieces (96 yards) Scarlet Saxony Flannel
5 dozen Island Handkerchiefs
4½ dozen Cricket and Boating Caps
4 dozen Fancy Garters
3 boxes (191 lbs) Tobacco
4 cwt Salt
1 gross Jews' Harps
6 dozen Mouth Organs
1 gross Tin Whistles
3 ,, Pipes
10 ,, Matches
19,500 Beads, assorted
3 dozen Feather Dusters
1 gross Snake Bracelets
1 ,, Glasses
3 ,, Zinc Mirrors

ARMS, AMMUNITION, &c.

3 Snider Rifles.
3 Winchester Rifles
12 Double-barrel breech-loading Guns
12 Bull Dog Revolvers
2500 Cartridges
2000 Snider Cartridges
3000 Brass Cartridges
5000 Revolver Cartridges
112 lbs Shot
64 lbs Lead
2 doz No. 5 Powder
3 Crimping Machines
2 lbs Grey Felt Wadding
1000 Cardboard Wads
3 12-guage Combination Machines
3 Powder Measures.
3 Shot Measures.
6 Barrel Cleaners, 12 guage
3 Barrel Cleaners, Revolvers
3 Bullet Moulds, 12 guage
12 Steel clip Cartridge belts.
Leather casting boxes, turn screws, nipper wrenches, plyers, hand vice and files
4 Doz. best ship signal Rockets.
3 Doz. Bickford's DT fuse

SCIENTIFIC INSTRUMENTS.

2 Compensation Balance Silver Watches, keyless
1 Maximun and Minimum Thermometer
2 Aneroid Barometors, with leather cases
2 Clinometers with spirit levels, do
1 Pocket Sextant in leather case.
1 Thermometer in case
24 Small Pocket Compasses
1 Pocket Log
1 Brass Parallel ruler.
2 Ivory Protractors
2 Brass Compass Dividers
1 Field Glass and Case
1 Prismatic Compass and leather case
1 Artificial Horizon and leather case
2 Pocket Compasses

CHEMICALS, &c., FOR COLLECTORS.

1 Drum, 75lbs, Plaster of Paris
10 lbs White Arsenic
5 lbs Camphor
5 lbs Corrosive Sublimate
50 lbs Burnt Alum
10 lbs Arsenical Soap
10 lbs Glycerine
2 lbs Chloroform
5 lbs Strong Ammonia, in ½lb bottles
1 lb Muriatic Acid
¾ lb Cyanide of potassium
¼ lb Collodion
2 lbs Chromic Acid in Crystals
½ lb Gelatine
6 lbs Carbolic Acid
1 lb Arseniate of Soda
2 lbs Ether, in ½lb bottles
2 lbs Sulphur
2 lbs Dry Gum
1 lb Arseniate of Potash
6 Syringes (various sizes) for injecting
1 Morphia Syringe
3 Glass Funnels
5 Rolls of Cotton Wool
10 Bundles of Tow
4 Dozen empty Canvas Bags for dredging debris
2 Rolls of Rope, 50 fathoms each
2 Galvanised Iron Tubs
2 Dredges and 4 Nets
4 Sieves
(for dredging)
1000 Small Tin Labels, numbered from 1 to 1000 for labelling Birds and Mammals
5 Double-boxes, cork lined, for insects.
3 Cases of Glass Jars, screw tops, ½ gross in each case, various sizes
4 Casks of White Spirit, 117 gallons
1 Man-hole Cask, filled with sawdust
6 Iron Man-hole Collecting Drums.
10 Wooden Cases, tin-lined, size 24in x 18in x 12in
1 Wooden Case, containing 50 tins for collecting, sizes 12in x 12in x 6in, and 12in x 6in x 6in

MISCELLANEOUS ARTICLES FOR COLLECTORS.

12 Yards Calico. to be oiled for Zoological and Botanical Collectors
2 Gallons of Oil, and Brush, for do.
4 Collecting Canvass Bags
48 Cardboard Collecting Boxes
1 Prospecting Pick
2 Hachet Hammers for Collectors
1 Pair Scissors, do
2 Knives, do
1 Package of Seed for Botanist
2 Large and 2 Small Brushes.
2 lbs Beeswax for Collector
4 Small Boxes of Gum Labels
1 Ream of White Blotting Paper
2 Reams of White Paper, for packing plants
1 Ream of Brown Paper, do
1 Package of 60 sheets of Cardboard
1 Spring Balance, 28lbs
2 Rolls Copper Wire, 1lb
1 Pair Nippers
20 Yards of Muslin
Guaze Wire Netting, 10ft long, with minute meshes
8 pairs Scissors, Knives, Saws, Pincers and Plyers, for Zoologist

PHOTOGRAPHIC APPARATUS AND CHEMICALS.

1 Half-plate, brass-bound, folding Camera, with three slides to hold six plates, and leather case for same
1 Ross' Rapid rect-lense
1 Tripod Stand, 1 Focussing Cloth.
1 Ruby Lamp, and spare ruby glasses
22 Half-plate Tin Boxes, each containing 12 dry plates.
4 Half-plate Wooden Boxes, each containing 24 dry plates.
4 Half-plate Wooden Boxes, each containing 12 dry plates,
4 Half-plate Ebonite Trays.
26 Dozen half-plate Baker's dry-plates
10 Dozen half-plate Baker's dry-plates, instantaneous
4 Ounces Pyro-acid
$\frac{1}{3}$ lb Bromide of Potassium
Baker's Stock Solution, No. 1
Baker's Stock Solution, No. 2
2 lbs Hypo-sulph-soda
2 lbs Alum
6 ozs Soda Sulph.
1 Set Scales and Weights.
$\frac{1}{2}$ lb Ammonia Bromide
6 oz Liquid Ammonia
1 Bottle Negative Varnish
1 Quire Blotting Paper
1 Tin Box, for lamp and dry plate
3 Cedar air-tight Cases, with locks and keys, for holding the boxes of dry plates.

THE OWEN STANLEY RANGE

EXPLORATION

AND

Mr. H. O. FORBES, F.R.G.S.

THE OWEN STANLEY RANGE EXPLORATION AND MR. H. O. FORBES, F.R.G.S.

THIS gentleman, who is well-known in scientific circles in London and who has had some experience of exploration in the neighbourhood of New Guinea, undertook last year to explore the great Owen Stanley range of mountains lying at the rear of Port Moresby. The undertaking was entirely a private one so far as arrangements and responsibilities were concerned, but Mr. Forbes had grants, of five or six hundred pounds in all, from the Royal Geographical Society and one or more other English societies; this, however, left him considerably short of the amount he would have to expend. Under these circumstances, Mr. Forbes, about the end of February cabled to Sydney "Willing join Lawes or Chalmers' expedition, if neither able (to) go, will Society co-operate with me." As neither of the gentlemen named were able to lead the Society's Expedition, the question of supporting Mr. Forbes was discussed between the Sydney and Melbourne branches of the society. Lord Derby had given special permission to Mr. Forbes to enter New Guinea, and, as His Excellency the High Commissioner viewed his (Mr. Forbes's) expedition with much favor, it was soon decided that he should be supported, but the special form which such support or co-operation should assume was not arranged without lengthened deliberation. It was at one time proposed to send two scientific gentlemen to join Mr. Forbes, at the cost of the Society, and also to make a money grant towards his general expenses: but the scheme was ultimately abandoned, and it was decided to make a grant of £500, subject to certain clearly defined conditions, which are fully set forth in the letters, &c., which we append. The Society thinks the generous support given to Mr. Forbes to have been wisely given, inasmuch as his Expedition, becomes Anglo-Australian instead of purely English; and Australia will be entitled to a full share of the results of his exploration.

Sydney, April 13, 1885.

Dear Sir,—I confirm my letter of the 21st ultimo, addressed to you at Batavia. Since that date, a cablegram has been received advising that you would leave England on the 30th ultimo, and asking the amount of help the Society intended to grant. The

Society having been anxious to deal with you in a liberal manner, decided to assist you to the extent of £500, if required, under certain conditions, and a cable-message to this effect was sent to Mr. Anderson in London.

I must explain to you that in consequence of the funds of the Society, for exploration purposes, consisting almost wholly of monies voted by Colonial Governments, our expenditure will be subject to a close audit and we are, therefore, obliged to use the greatest exactness in financial and other details.

The £500, or so much thereof as you may require, is to be paid to you in the form of monthly or periodical allowances, and the conditions which I am directed to put before you are simply; (1) that you, in consideration of such assistance, give the Society, at the earliest time possible, a complete report, and a duplicate collection of specimens; (2) that you recognise the Rev. W. G. Lawes as in every respect the agent and official representative of the Society.

The Rev. W. G. Lawes, who for some time past has been in Sydney, leaves here on the 18th instant, for Port Moresby. He takes with him a written form of agreement which kindly sign. I herein enclose a copy.

As the method of payment named may not be quite practicable, authority has been given to Mr. Lawes to alter or vary the same in such manner as he deems to be required by circumstances. The Society will open a bank credit at Cooktown, in favour of Mr. Lawes, whose payments to you will probably be in the form of drafts on the said Bank.

In conclusion, I ask you to accept the Society's good wishes for a safe and thoroughly successful exploration in the interesting and important district you have chosen for your Expedition.

I remain, dear sir,
Yours truly,
(Signed) E. PULSFORD, Secretary.

To H. O. FORBES, ESQ., F.R.G.S.
Thursday Island.

FORM OF AGREEMENT TO BE SIGNED BY MR. FORBES.

IN consideration of the subsidy granted by the Geographical Society of Australasia to assist me in the exploration of the Owen Stanley range of mountains:—I hereby agree to give the said Society, at the earliest time possible, a complete report on the country explored, and a duplicate collection of specimens; delivery thereof to be made to the Society in Sydney, or to the Rev. W. G. Lawes, in New Guinea.

I further agree to recognise the Rev. W. G. Lawes as in every respect the agent and official representative of the said Society.

SYDNEY, April 13th, 1885.

The Rev. W. G. LAWES, Sydney.

Dear Sir,—The following resolution has been passed by the Council:—

"The Administrative Council of the Geographical Society of Australasia hereby request and authorise the Rev. W. G. Lawes to act as its agent and official representative in making and carrying out the needful arrangements in connection with the subsidy granted by the Society to assist Mr. H. O. Forbes in his exploration of the Owen Stanley range. The following resolution passed by the Council on the 31st March conveys the wishes and intentions of the Society: 'That the arrangement to be made with Mr. Forbes be a monthly allowance, for a period to be agreed upon, so that the aggregate allowance shall not exceed £500. Mr. Forbes to supply duplicates of all specimens and of all reports upon country explored.' The Council, considering that it may be impracticable for the money to be paid in the way stated, hereby authorise Mr. Lawes to alter or vary the method of payment in such manner as he deems to be required by circumstances. Mr. Lawes is requested to obtain Mr. Forbes' signature in duplicate to a written agreement, and also to obtain duplicate receipts for all payments."

In accordance with the foregoing resolution, and your own kind promise to accept the position, I ask that you will consider yourself the agent and official representative of this Society, in arranging and disbursing the subsidy granted to Mr. Forbes.

The sum of £500 will this week be placed to your credit at the Queensland National Bank, Cooktown, where it will be necessary for you to call to leave your signature, and to arrange any detail required.

With this are sent: (1) letter for Mr. Forbes, (2) Form of Agreement to be signed in duplicate by him, (3) a number of forms to be used by Mr. Forbes in giving receipts, (4) six copies of the Society's "Proceedings." One of the forms of receipt is filled up for your guidance; details of course may be varied as required.

In conclusion allow me to again express my appreciation of your helpful kindness, and to wish you a safe and pleasant voyage to Port Moresby.

I remain, dear Sir,
Yours faithfully,
(Signed) E. STRICKLAND,
Vice-President Geographical Society of Australasia.

As intimated, the £500 was put to the credit of Mr. Lawes, and he telegraphed from Cooktown that he had called at the Bank, and that all was in order. The Society cannot too strongly express the sense of its deep indebtedness to Mr. Lawes, and indeed without his aid it would have been a very difficult matter to carry out its wishes with regard to Mr. Forbes.

At the meeting of the Administrative Council held on April 10th, the following resolution was moved by Sir Edward Strickland in laudatory terms :—

"The President and Council of the Geographical Society of Australasia offer to the Rev. W. G. Lawes their most sincere thanks for the readiness and kindness with which, during his stay in Sydney, he has assisted them with information and advice relative to New Guinea exploration ; and further, for having undertaken the task of arranging and conducting the Society's business with Mr. H. O. Forbes."

The resolution was seconded by Dr. Belgrave, and carried with acclamation.

Contrary to expectation Mr. Forbes did not leave London till the month of April. On May 14th a cablegram was received from him announcing his arrival in Java, and stating that he would remain there a month collecting porters. He also asked for information about the conditions attached to the grant to him, to which message a reply was sent to him by cable. The Society takes this opportunity of most warmly thanking Mr. J. E. Squier, the Manager of the Cable Company, for the favour of the free transmission of various messages to London and Batavia, which relieved the Society of no slight expense

July 18.—A cable message is to hand from Mr. Forbes, stating that the B.I.S.N. Company had refused to take his porters by the steamer *Dorunda*, and asking the Society to arrange for their passage by the next steamer. Mr. Forbes will not be likely, therefore, to get to New Guinea before September.

F. Cunninghame & Co., Printers, 146 Pitt-street, Sydney