. 12.]

JOURNAL

OF THE

STRAITS BRANCH

OF THE

ROYAL ASIATIC SOCIETY.

DECEMBER, 1883.

PUBLISHED HALF-YEARLY.

SINGAPORE:

PRINTED AT THE GOVERNMENT PRINTING OFFICE.

1884.

AGENTS OF THE SOCIETY:

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Germany, ... K. F. KOEHLER'S ANTIQUARIUM, Leipzig.

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STRAITS BRANCH
OF THE
ROYAL ASIATIC SOCIETY.

PATRON:

His Excellency Sir FREDERICK ALOYSIUS WELD, K.C.M.G.

COUNCIL FOR 1884.

The Hon'ble C. J. IRVING, C.M.G., *President.*

The Hon'ble A. M. SKINNER, *Vice-President, Singapore.*

D. LOGAN, Esquire, *Vice-President, Penang.*

The Hon'ble W. E. MAXWELL, *Honorary Secretary.*

EDWIN KOEK, Esquire, *Honorary Treasurer.*

CH. TREBING, Esquire, M.D.,
H. L. NORONHA, Esquire,
R. W. HULLETT, Esquire,
A. DUFF, Esquire,
A. KNIGHT, Esquire,
} *Councillors.*

LIST OF MEMBERS

FOR

1884.

Nos.	Names.	Addresses.
1	Adamson, W.	England.
2	Anson, A.	
3	Armstrong, A.	Malacca.
4	Bampfylde, C. A.	Sabah, North Borneo.
5	Baumgarten, C.	Singapore.
6	Bernard, F. G.	Singapore.
7	Bicknell, W. A.	Singapore.
8	Bieber, Dr. E.	Singapore.
9	Biggs, The Revd. L. C.	Malacca.
10	Birch, J. K.	Province Wellesley.
11	Bland, R. N.	Malacca.
12	Bond, The Hon'ble I. S.	Singapore.
13	Brown, D.	Penang.
14	Brown, L. C.	Penang.
15	Bruce, Robt. R.	Pulau Pangkor.
16	Buckley, C. B.	Singapore.
17	Burkinshaw, J.	Singapore.
18	Cantley, N.	Singapore.
19	Cavenagh, General Orfeur	London.
20	Creagh, C. V.	Pêrak.
21	Croix, J. Errington de la	Pêrak.
22	Dalmann, C. B.	Europe.
23	Daly, D. D.	North Borneo.
24	Denison, N.	Pêrak.
25	Dent, Alfred	North Borneo.
26	Dennys, Dr. N. B.	Singapore.
27	Douglas, Captain B.	
28	Duff, A.	Singapore.
29	Dunlop, Colonel S., c.m.g.	Singapore.
30	Dunlop, C.	Singapore.

MEMBERS FOR 1884,—*Continued.*

Nos.	Names.	Addresses.
31	EVERETT, A. HART	Kudat, North Borneo.
32	FAVRE. The Revd. L'Abbé J. (Honorary Member.)	Paris.
33	FERGUSON, A. M., Jr.	Colombo.
34	FRANK, H.	Singapore.
35	FRASER, J.	Singapore.
36	GILFILLAN, S.	London.
37	GRAHAM, The Hon'ble JAMES	Singapore.
38	HAUGHTON, H. T.	Malacca.
39	HERVEY, The Hon'ble D. F. A.	Malacca.
40	HERWIG, H.	Europe.
41	HEWETT, R. D.	Pêrak.
42	HILL, E. C.	Singapore.
43	HOLE, W.	Johor.
44	HOSE. The Right Revd. Bishop (Honorary Member.)	Sarawak.
45	HULLETT, R. W.	Singapore.
46	INCHI IBRAHIM BIN ABDULLAH.	Singapore.
47	IRVING. The Hon'ble C. J., CM.G.	Singapore.
48	JOAQUIM, J. P.	Singapore.
49	JOHOR, H. H. The Maharâja of, (Honorary Member.)	Johor.
50	KEHDING, F.	
51	KELLMANN, E.	Penang.
52	KER, T. RAWSON	Johor.
53	KNIGHT, A.	Singapore.
54	KOEK, EDWIN	Singapore.
55	KROHN, W.	Europe.
56	KROM MUN DEWAOWONGSE VAROPRAKAR, H. H. Prince.	
57	KYNNERSLEY, C. W. S.	Penang.
58	LAMBERT, J. R.	Singapore.
59	LAWES, The Revd. R. G. (Honorary Member.)	New Guinea.

MEMBERS FOR 1884,—*Continued.*

Nos.	Names.	Addresses.
60	LEECH, H. W. C.	Pêrak.
61	LEMPRIERE, E. T.	Labuan.
62	LOGAN, D.	Penang.
63	LOW, Sir HUGH, K.C.M.G.	Pêrak.
64	LOW, H. BROOKE.	Sarawak.
65	MACKAY, The Revd. J. ABERIGH	Paris.
66	MIKLUHO-MACLAY, Baron (Honorary Member.)	
67	MAN, General H.	Surbiton, London.
68	MANSFIELD, G.	Europe.
69	MAXWELL, The Hon'ble W. E.	Singapore.
70	MAXWELL, R. W.	Singapore.
71	MILLER, JAMES	Singapore.
72	MOHAMED BIN MAHBOOB.	Singapore.
73	MOHAMED SAID.	Singapore.
74	MUHRY, O.	Singapore.
75	NORONHA, H. L.	Singapore.
76	NUY, P.	Singapore.
77	ORD, Sir HARRY ST. GEORGE, K C.M.G.,	London.
78	PALGRAVE, F. GIFFORD (Honorary Member.)	
79	PARSONS, J. A.	Singapore.
80	PAUL, W. F. B.	Sungei Ujong.
81	PELL, BENNETT	
82	PERHAM, The Revd. J. (Honorary Member.)	Sarawak.
83	PICKERING, W. A.	Singapore.
84	POOLES, F.	Singapore.
85	READ, The Hon'ble W. H.	Singapore.
86	RICKETT, C. B.	
87	ROWELL, Dr. T. I.	Singapore.
88	SARAWAK, H. H. The Râja of, (Honorary Member.)	Sarawak.

MEMBERS FOR 1884,—*Continued.*

Nos.	Names.	Addresses.
89	SCHAALJE, M.	
90	SERGEL, V.	Rhio.
91	SHELFORD, THOMAS	Singapore.
92	SKINNER, The Hon'ble A. M.	Singapore.
93	SMITH, The Hon'ble C. C., C.M.G.	Singapore.
94	SOHST, T.	Singapore.
95	SOURINDRO MOHUN TAGORE, Râja, Mus. Doc.	Singapore. Calcutta.
96	STIVEN, R. G.	Singapore.
97	STRINGER, C.	Singapore.
98	SWETTENHAM, F. A.	Sĕlângor.
99	SYED ABUBAKAR BIN OMAR AL JUNIED,	Singapore.
100	SYED MOHAMED BIN AHMED AL SAGOFF,	Singapore.
101	SYERS, H. C.	Kuâla Lumpur, Sĕlângor.
102	TALBOT, A. P.	Singapore.
103	TAN KIM CHING	Singapore.
104	TENNISON-WOODS, The Revd. J. E. (Honorary Member.)	
105	THOMPSON, A. B.	Deli.
106	THOMPSON, J. T.	New Zealand.
107	TOLSON, G. P.	Achin.
108	TRACHSLER, H.	Singapore.
109	TREACHER, The Hon'ble W. H.	Kudat, North Borneo.
110	TREBING, Dr. C.	Singapore.
111	TRÜBNER & Co.	London.
112	VERMONT, J. M. B.	Penang.
113	WALKER, Capt. R. S. F.	Pĕrak.
114	WATSON, EDWIN A.	Johor.
115	WHAMPOA, HOO AH YIP	Singapore.
116	WHEATLEY, J. J. L.	Sandakan.

PROCEEDINGS

OF THE

GENERAL MEETING

OF THE

STRAITS BRANCH

OF THE

ROYAL ASIATIC SOCIETY,

HELD AT THE

EXCHANGE ROOMS.

THURSDAY, 24TH JANUARY, 1884.

PRESENT :

The Hon'ble C. J. IRVING, C.M.G., *in the Chair.*

The Hon'ble A. M. SKINNER, *Vice-President;* the Hon'ble W. E. MAXWELL, *Honorary Secretary;* E. KOEK, Esquire, *Honorary Treasurer;* H. L. NORONHA, Esquire, *Councillor;* and the following other Members :—

The Hon'bles W. H. READ and JAMES GRAHAM; Messrs. C. B. BUCKLEY, R. W. HULLETT, J. FRASER, W. BICKNELL, A. KNIGHT.

The minutes of the previous general meeting were read, approved of, and signed by the Chairman.

The Honorary Secretary read the Report of the Council for the year 1883 (*vide* p. xiii), and the Accounts of the Honorary Treasurer for the same year (*vide* p. xvii).

Mr. BUCKLEY moved, seconded by the Hon'ble W. H. READ, that the Report and Accounts be approved. Carried unanimously.

The names of the new members mentioned in the Report as having been elected by the Council since the last general meeting were then submitted for the approval of the meeting. These were, by a unanimous vote, formally approved.

The election of the two honorary members mentioned in the Report—the Revd. R. G. LAWES, New Guinea, and the Revd. J. E. TENISON-WOODS—were also unanimously confirmed, on the motion of the Hon'ble J. GRAHAM, seconded by the Hon'ble A. M. SKINNER.

The election of President and Members of the Council, was then proceeded with.

Mr. IRVING stated that he should be leaving Singapore before long for some time, and suggested, in view of that, that some other gentleman should be elected to the position of President. He suggested the name of the Hon'ble CECIL C. SMITH, whose return might be expected shortly.

Mr. BUCKLEY suggested that the matter might be left till Mr. IRVING was really going away.

The Honorary Secretary said that, pending another general meeting, it would be sufficient to have the Vice-President in the chair during Mr. IRVING's absence.

The Chairman thought it would be best to elect Mr. C. C. SMITH now, remarking that Mr. SMITH would be here very soon. For his own part, he believed there would not be, in all probability, another meeting before his departure, at which he could be present.

The election by ballot was then proceeded with, with the following result:—

President, ... The Hon'ble C. J. IRVING.
Vice-President, at Singapore, The Hon'ble A. M. SKINNER.
Vice-President, at Penang, D. LOGAN, Esquire.
Honorary Secretary,..... The Hon'ble W. E. MAXWELL.
Honorary Treasurer,..... E. KOEK, Esquire.

Councillors,... Dr. C. TREBING.
H. L. NORONHA, Esquire.
R. W. HULLETT, Esquire.
A. DUFF, Esquire.
A. KNIGHT, Esquire.

Some conversation ensued as to the approaching return of Dr. BIEBER, who was spoken of by various members as an enthusiastic member of the Society and one who would fill the office of Vice-President with ability.

Mr. SKINNER, in reply to a question, said that the maps (to which reference is made in the Report of the Council) would now be prepared.

A vote of thanks to the Chairman closed the proceedings.

ANNUAL REPORT

OF THE

COUNCIL

OF THE

STRAITS BRANCH

OF THE

ROYAL ASIATIC SOCIETY,

FOR THE YEAR 1883.

The Council are happy in being able to report that the affairs of the Society are financially satisfactory, and that there is every reason to hope that, by its agency, good work is being done in the encouragement of research and the extension of scientific knowledge in the Far East.

The following new members have been elected by the Council since the last general meeting, and their names are now submitted for confirmation :—R. N. BLAND, Esq., C. S.; W. A. BICKNELL, Esq.: the Rev. R. G. LAWES, New Guinea, (Honorary Member) ; F. POOLES, Esq.; C. B. BUCKLEY, Esq.; C. V. CREAGH, Esq.; A. KNIGHT, Esq.; H. BROOKE LOW, Esq.; His Royal Highness Prince KROM MUN DEWAOWONGSE VAROPRAKAR; J. A. PARSONS, Esq.; N. CANTLEY, Esq.; C. B. RICKETT, Esq.; the Rev. J. E. TENISON-WOODS, (Honorary Member).

The following have retired :—Dr. LARGE; J. ROSS, Esq., Junr. ; A. H. THOMPSON, Esq.

The deaths of two members have been announced—FRANK HATTON, Esq., and C. EMMERSON, Esq.

Regular periodical meetings for the purpose of reading and discussing papers upon subjects of interest have been found impossible for some time past, but it is hoped that they may be recommenced, should the Society at any time find a permanent home in

the proposed Museum. The objects of the Society are not limited to the publication of a Journal; and it is felt that they would be advanced in many ways had members greater opportunities for meeting and for receiving and communicating suggestions as to subjects for enquiry and research.

The text book of Geography mentioned in the last Annual Report has not yet been completed. Great difficulty has been encountered in arranging for its production by a competent hand. It is now being completed under the direction of Mr. SKINNER, and it is believed that it will be made over to the Government for publication early in the year.

It has been proposed that the Council shall undertake the republication of a selection of papers relating to the Eastern Archipelago from the Journals of the Royal Asiatic Society, the Royal Geographical Society, the Asiatic Society of Bengal, the Madras Literary Society, &c., &c. Many papers scattered through the volumes of the proceedings of these and other Societies are of great local interest. MARSDEN, RAFFLES, LEYDEN, CRAWFURD and LOW contributed to "Asiatic Researches;" NEWBOLD'S papers on the Malay States, and CANTOR'S Catalogues of Malayan Animals, Reptiles and Fishes, are to be found in the Journal of the Asiatic Society of Bengal; a journey of LOGAN'S through part of the Peninsula is printed in the Journal of the Royal Geographical Society. These and many other papers, if collected and republished, will, it is believed, be eagerly read by residents in the Straits of Malacca, who would never have the opportunity of consulting the files of the Journals in which they originally appeared. The permission of the Asiatic Society of Bengal has been asked for the republication of papers contained in their Journal; and Messrs. TRÜBNER and Co. will undertake the production of two volumes, to begin with, if the Society will take two hundred copies.

With the object of extending our knowledge of the Geography of the Peninsula, arrangements have been made for the preparation, for the use of the Society, of a skeleton map of the Peninsula on a scale of a quarter of an inch to a mile, upon which all new information will be entered, from time to time, as exploration advances.

A Catalogue of the Books belonging to the Society has been prepared and is attached to this Report. Steps will be taken to have volumes of the foreign Journals suitably bound.

The news of the death in Borneo, from a gun-accident, of Mr. FRANK HATTON, a member of this Society, was received here in March last, and the following Minute was entered upon the Minutes of the Council of the Society held on the 11th June, 1883:—

"The President and Council of the Straits Branch of the Royal Asiatic Society desire to record the great regret with which they have heard of the premature death of Mr. FRANK HATTON, F.C.S., who had evinced great interest in the objects of the Society, and whose ability and industry had led them to hope for much valuable scientific work from him in connection with Borneo."

The ordinary members of the Society have had too frequently but little time to give to literary pursuits and scientific studies. Still, nevertheless, the Council appeal to those whose personal tastes may lead them to take up any of the numerous branches of investigation within the reach of any one living in these regions; and to those whose residence in the Malay Peninsula, Borneo, Siam, &c., may enable them to note and record features of native life, folklore, superstition, &c., or to gather vocabularies of the languages of little known tribes,—to do their share in adding to the store of knowledge bequeathed to us by earlier students.

The Journal of the Indian Archipelago, conducted by J. R. LOGAN, from 1847 to 1859, numbered amongst its contributors, Bishop BIGANDET of Rangoon, Bishop LE FEVRE of Cochin China, and the Abbé FAVRE (author of excellent dictionaries of the Javanese and Malay languages). The body of devoted men whom the *Mission Étrangères* of Paris maintain in Indo-China have exceptional opportunities for Oriental studies, and no doubt number among them scholars of ability. Will not some of them, and missionaries of other denominations, aid in the objects of this Society? Naval Officers of our own and foreign Navies on the China Station sometimes visit localities which have been seldom or never described, or observe meteorological phenomena which it would be useful to record. Papers on such subjects would be welcomed. Members living in the Native States in the Peninsula, have still facilities for

collecting and recording particulars of customs, ceremonies, superstitions and observances which belonged to the purely Malay political organisation, and which, already rapidly disappearing, will die out altogether, as district after district is opened up, and foreign ideas assert their ascendancy. The opportunity for doing this in Pêrak and Kĕdah should be seized before it is too late.

The following papers have been published in the Journal of the Society since the last general meeting:—

"Journal of a Trip from Sarawak to Meri;" by N. Denison.

"The Mĕntra Traditions;" by D. F. A. Hervey.

"Probable Origin of the Hill Tribes of Formosa;" by J. Dodd.

"Sea Dyak Religion;" by the Rev. J. Perham.

"The Dutch in Pêrak;" by W. E. Maxwell.

"Outline History of the British Connection with Malaya;" by A. M. Skinner.

"Malayan Ornithology;" by Capt. H. R. Kelham.

"Malay Proverbs;" by W. E. Maxwell.

"The Pigmies;" translated by J. Errington de la Croix.

"On the Patâni;" by W. Cameron.

"Latah;" by H. A. O'Brien.

"The Java System;" by A. M. Skinner.

The Honorary Treasurer's accounts, which are annexed, show a credit balance of $1,528.95; but this includes a sum of $400 to be expended for Government in the production of the work on Geography above alluded to. There is little reason to believe that any considerable portion of the subscriptions reported as outstanding will not be recovered.

W. E. MAXWELL,
Honorary Secretary.

STRAITS BRANCH OF THE ROYAL ASIATIC SOCIETY.

Treasurer's Cash Account for the year 1883.

1883.		$	c.	1883.		$	c.
	Balance on 31st December, 1882,	939	07		Paid for publication of Journal No. 10.	97	50
	Subscriptions for 1882, ...	18	00		Paid for publication of Journal No. 11, ...	114	00
	Subscriptions for 1883, ...	375	00		Paid W. F. GARLAND & Co. for a tracing of Pahang River,	20	00
	Sale of Journals, ...	12	00		Paid Singapore and Straits Printing Office for printing circulars, ...	5	00
	Sale of Maps of the Malay Peninsula, ...	9	24		Paid ditto for lithographing Plans of Galena and Tin Mines and the Gulf of Siam, ...	10	70
	Sale of "Hikayat Abdullah,"	30	00		Paid WILLIAM CAMERON for copy of map of U u Pahang,	100	00
	From Mercantile Bank being Interest on $600 from 21st Jan., 1882 to 21st January, 1883, at 5 per cent., ...	30	00		Paid A. COVENEY for a tracing of a map of Sĕlângor, ...	5	00
	From Colonial Treasurer, for costs on account of publication of a work on the Geography of the Malay Peninsula and neighbourhood,	500	00		Paid J. J. MANUEL to account preparation of Geography of the Indian Archipelago, ...	100	00
	From Chartered Bank, being interest on $200 for three months at 3 per cent., ...	1	50		Paid Salary to Clerk, ...	120	00
	Carried forward, ...	1,914	81		*Carried forward,*	572	20

Treasurer's Cash Account for the [illegible]

1883.		$ c.	1883.		$ c.
	Brought forward...	1,914 81		*Brought forward,*	572 20
	From Chartered Bank, being the amount deposited on 17th February, 1882,	200 00		Paid Special Brothers for Paper,	69 10
	From Mercantile Bank, being interest on $200 for one year,	10 00		Paid for Postage,... ...	19 76
				Paid Cooly-hire, ...	7 30
				Paid for Freight, ...	6 29
				Paid for Miscellaneous Expenses,	70 23
					744 88
				Paid Mrs. E. [illegible]EK per cash book, ...	23 07
				Balance, ...	1,356 86
		2,124 81			2,124 81

SINGAPORE,
4th January, 1884.

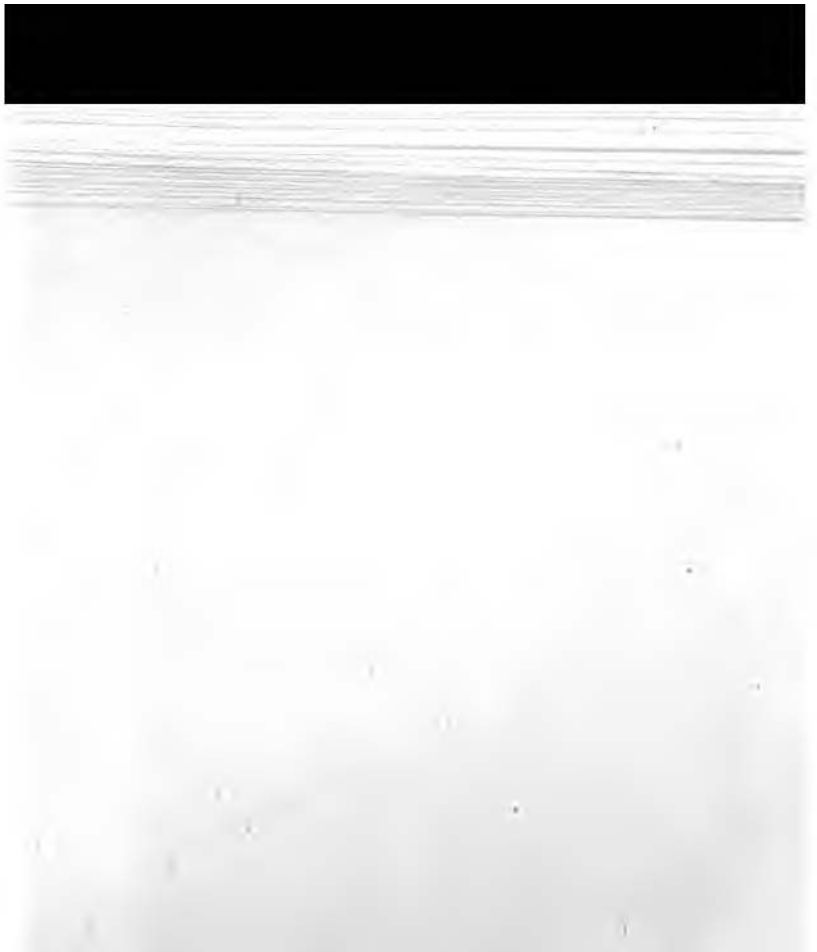
EDWIN KOEK,
Honorary Treasurer

ASSETS AND LIABILITIES.

1883.			$ c.	1883.		$ c.
Dec. 31	Subscriptions 1882 outstanding,		23 33	January 4	Clerk's Salary, &c. for December, ...	11 21
	Do. 1883 do.,		160 00			
	The Balance of $1,356.86 is made up of:—					
	Amount deposited with the Chartered Mercantile Bank, ...	$600 00				
	Do. Do. due 6th March, 1884, at 5 per cent., ...	105 00				
	Amount deposited with the Chartered Bank of I. A. and China,	500 00				
	In Bank, ...	136 86				
	Cash in hand, ...	15 00				
			1,356 86		Balance, ...	1,528 95
			1,540 19			1,540 19

SINGAPORE,
4th January, 1884.

EDWIN KOEK,
Honorary Treasurer.



CATALOGUE

OF

BOOKS, &c., IN THE LIBRARY

OF THE

STRAITS BRANCH

OF THE

ROYAL ASIATIC SOCIETY.

(JANUARY, 1884.)

ABDULLAH—Hikayat Abdullah.

Annales de l'Extreme Orient. Nos. 55 and 58 to 65 of 1883. (Nos. 56 and 57 missing.)

Asiatic Society of Japan—Rules of the.

Attempt to solve the Problem of the first Landing Place of Columbus in the New World. Methods and Results. Washington, 1882.

BASTIAN, DR. A.—Beiträge zur Ethnologie und darauf begründete studien. Berlin, 1871.

Die Culturländer des alten America—I Bd. ein Jahr auf Reisen. II Bd. Beiträge zu Geschichtlichen Vorarbeiten. Berlin, 1878.

Geographische und Ethnologische Bilder. Jena, 1873.

Remarks on the Indo-Chinese Alphabets. (Royal Asiatic Society, June, 1867).

Bataviaasch Alphabetische Lijst van Land, Zee, Rivier, Wind-Storm en Anderekaarten toebehoorende. Batavia, 1873.

Bataviaasch Catalogus der Ethnologische Afdeeling van het Museum. Batavia, 1877.

Bataviaasch Catalogus der Numismatische Afdeeling van het Museum. Batavia. 1877. (2 copies.)

Bataviaasch Chineesch-Hollandsch Woordenboek van het Emoi Dialekt door J. J. C. FRANCKEN en C. F. M. DE GRIJS. Batavia, 1882.

Bataviaasch Eerste vervolg Catalogus der Bibliotheek en Catalogus der Maleische, Javaansche en Kawi Handschriften. Batavia, 1872.

Bataviaasch Genootschap van Kunsten en Wetenschappen—Catalogus d Bibliotheek door Mr. J. A. VAN DER CHIJS, Bibliothecaris. Bat via, 1864.

Bataviaasch Register op de Notulen der Vergaderingen over de Jar 1867 t/m 1878. Batavia, 1879.

Bataviaasch Tweede Vervolg Catalogus der Bibliotheek. Batavia, 187

Bataviaasch Verslag van eene verzameling Maleische, Arabische, Javaans en andere Handschriften door de Regeering van Nederlandsch Indie door Mr. L. W. C. VAN DEN BERG. Batavia, 1877.

Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschich Sitzung, 1876. (2 copies.)

BESONDERER ABDRUCK aus den Berichten der Naturforschenden Gesel schaft zu Leipzig. Jahrgang, 1880.

Bibliotheque de feu M. JULES THOMELIER. (Partie Orientale et Lingu stique). Paris, 1880.

Bidrag till Kännedom af Finlands Natur och Folk, utgifna af Finska Vete skaps-Societeten Trettiandesjette Häftet. (2 copies.)

Bijdragen tot de taal-Land en Volkenkunden van Nederlandsch-Indie. 18 to 1879, 1881 and 1882.

BLUMENTRITT, FERDINAND.—Vocabular einzelner Ausdrücke und Redea sarten, welche dem Spanischen der Philippinischen Inseln eigen thümlich sind. Separatabdruck aus dem XVI Jahresberichte d Communal-ober Realschule in Leitmeritz, 1882.

BOCK, CARL.—Reis in Oost en Zuid-Borneo van Koetei naar Banjermass ondernomen op last der indische regeering in 1879 en 188 (with plates). MARTINUS NIJHOFFS', Gravenhage, 1881.

Bollettino de la Società Africana d'Italia. 1883, Fasc. III and VI.

Bollettino della Società Geografica Italiana. Vols. IV to VIII. (Fasc. and 6 of Vol. VII and 3 of Vol. VIII missing.)

BOWERBANK, J. S., F. R. S., F. Z. S.—Description of Five new Species o Sponges discovered by A. B. MEYER on the Philippine Islan and New Guinea. London, 1877.

Bulletin de la Société des Etudes Indo-Chinoises de Saigon. January March, 1883.

Bulletin de la Société de Géographie Commerciale de Paris. 1879 to 188 (Missing numbers:—2 and 3 of 1879, 3 of 1879-80, 3 of 1881 82 and 3 of 1883-84.)

Bulletin de la Société de Géographie de Marseilles. 1879 to Sept., 188 (Nos. 6 and 7 of 1879 and 1 to 3 of 1883 missing.)

Bulletin de la Société de Géographie de Paris. 1879 to 1882 and for firs three quarters of 1883. (Missing numbers:—Jan. and Nov., 1879 Jan. and Feb., 1880.)

Catalogue de Livres de Fonds et en Nombre. Paris, 1879.

Catalogue de Livres sur les Possessions Neerlandaises aux Inde savec des Divisions sur les Indes Anglaises, la Chine et la Japon, Siam, la Perse, Siberie, l'Afrique, specialement la Cote de Guinée et le Cap de Bonne Esperance, Surinam, Guyana et l'Australie, à la fin un Atlas de Cartes de Planches Historiques et Topographiques et de Portraits. Amsterdam, 1882.

Catalogue of the Library of the North-China Branch of the Royal Asiatic Society. Shanghai, 1872.

Codicum Arabicorum in Bibliotheca Societatis Artium et Scientiarum, quae Bataviæ floret asservatorum. Catalogum inchoatum a Doct. R. FRIEDERICH absolvit indicibusque instruxit. L. W. C. VAN DEN BERG. Batavia, 1873.

COLLINS, JAMES.—Report on Caoutchouc. London, 1872.

Cosmos. Vol. VII. Nos. I to IX.

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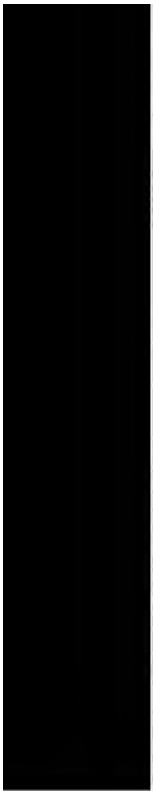

ORNITHOLOGICAL NOTES

MADE IN THE

STRAITS SETTLEMENTS

AND IN THE

WESTERN STATES OF THE MALAY PENINSULA.

(First published in "The Ibis.")

(Continued from Journal No. 11, p. 29, and concluded.)

GALLUS FERRUGINEUS (Gm.). The Jungle-fowl.

The common Jungle-fowl, the "Ayam-utan" of the Malays, is exceedingly plentiful throughout the Native States; but I never met with it on the island of Singapore, and it is not common, if, indeed, found at all, on Pulau Penang.

Whether or not the Malay species, Temminck's *G. bankiva*, is really distinct from the Indian, it is hard to say; but if it is distinct, both kinds are certainly found in the Malay countries; for, while stationed in Pêrak, I shot, out of the same tract of jungle, unmistakable specimens of *G. ferrugineus*, with the rich golden hackles and white ear-patches, also birds of far darker, in one case almost black, plumage. But the wild Jungle-fowl interbreed so much with domestic roosters from the villages, that I cannot help thinking these dark-coloured birds to be the results of such intercourse, particularly as many of them, though very unlike the typical *G. ferrugineus*, are not like one another, varying much in the intensity of their colouring.

In Pêrak I found Jungle-fowl breeding from March to July; and the young, when three or four weeks old, were capital eating—far better than the full-grown bird, which has but little more game flavour than the ordinary domestic fowl.

At the first glimmer of daylight, and again towards evening, the Jungle-cocks may be heard in all directions, crowing loudly, and by very careful stalking may occasionally be got at; but I found far the most successful plan was, either early in the morning, or else about sunset, to sneak quietly along the edges of clearings and patches of cultivation, which at those times the Jungle-fowl frequent in search of food; and in this way; by dodging from bush to bush, I frequently rendered a good account of them. But it required the most careful stalking, as on the slightest alarm the birds ran into the thick jungle, where it was almost useless to follow them. Once or twice I shot them in thick cover by letting my dog hunt them up into the trees, which they did not leave till I was within range.

In Province Wellesley the Malays decoy Jungle-fowl by imitating the crowing and flapping of the wings of the cock, when the birds coming to accept the supposed challenge are shot.

The following are descriptions of birds I shot near Kuâla Kangsa, Pêrak:—The cock, though in magnificent plumage, wanted the white ear-coverts; he was about 22 inches in length, tarsus 3 inches; irides orange; head and neck covered with long golden hackles, darkest on the head and nape; the back and long upper tail-coverts rich chestnut, the latter of a golden hue; primary and secondary wing-coverts black, glossed with metallic shades of purple and green; lesser coverts rich maroon; wing-quills dusky, with rufous margins to the outer webs; tail black, glossed with green; underparts dull black, with some of the feathers edged with brown.

The hen is of much plainer plumage. Upper parts brown, minutely freckled with a paler and more rufous shade of the same colour, with some of the feathers pale-shafted; the hackles are black, short, and edged with yellow; underparts pale rufous-brown; the feathers of the breast pale-shafted; length of bird about 15 inches.

GALLUS VARIUS (Shaw.).

In the Botanical Gardens at Singapore there was a specimen of this handsome Jungle-fowl; but probably it had been imported.

EXCALFACTORIA CHINENSIS (Linn.). The Blue-breasted Quail.

This tiny but most beautifully marked Quail swarms throughout the Malay States, being found in almost every dry paddy-field or tract of scrub and grass-covered ground. It is difficult to flush, not rising until almost trodden on; then, after skimming over the grass with a Partridge-like flight for fifty or sixty yards, it drops like a stone, and is hard to put up again, even with a dog.

The sudden way in which they drop to the ground frequently deceives the inexperienced sportsman, who, thinking he has made a successful shot, hurries to where the bird apparently fell, and makes a long and fruitless search, while the object of his pursuit is running as hard as it can lay legs to the ground to a distant part of the field.

They are very good eating, but so small as to be scarcely worth a charge of shot; and after being a few weeks in the country, and ceasing to look on them as a novelty, one seldom fires at them, confining one's attention to larger game, in the shape of Snipe, Plover, &c.

The sexes are very unlike in plumage, the male being by far the more handsome and brightly-coloured bird. One, shot near Saiyong, Pĉrak, on 24th April, was 5¼ inches long; irides deep crimson; legs bright orange; beak black; head and upper parts brown; feathers of the back pale-shafted, and banded, mostly on one web only, with black; wings pale brown, some of the coverts edged with rufous and bluish grey; forehead, cheeks, sides of neck, and breast bright bluish grey; moustache-streak and broad crescentic mark on throat pure white, bordered by a deep black line; chin and throat black; abdomen ruddy chestnut. The female is not nearly so boldly marked: one, shot at Singapore on 7th November, measured 5¼ inches in length, tarsus ¾ inch; legs orange; irides red-brown; supercilium, throat, and forehead rufous brown; chin dull white; breast dingy brown, with narrow black cross bars; feathers of flanks much lengthened; the white and black markings of the throat, also the chestnut abdomen of the male, were wanting.

ROLLULUS ROUROUL (Scop.). The Crested Partridge.

Though not rare, this bird is seldom seen, being very shy, and on the approach of danger trusting to its legs rather than taking flight. All my specimens were snared in the neighbourhood of Kuâla Kangsa.

Captain WARDLAW-RAMSAY tells me he found it plentiful round Mount Ophir; and I saw several skins in Malaccan collections. These birds thrive well in confinement, but are not easily tamed: some which were in my aviary for several months were always wild, hiding directly any one appeared in sight; but early in the morning, when all was quiet, and they thought they were not observed, they used to come out of their hiding-places and feed on rice and Indian corn.

The male is very handsome, with a crest of red plumes on its head; the female is without the crest, and of much duller colours than her mate.

RHIZOTHERA LONGIROSTRIS, (Temm.).

While stationed at Kuâla Kangsa, Pêrak, a Malay brought me one of these curious Pheasant-like birds, which he had snared, and I put it in my aviary; but it only lived a few weeks.

I also saw a couple in confinement, at Singapore, in Mr. WHAMPOA's garden; but he could not tell me anything about them, not even where they came from. They were about the size of a domestic hen, wings and tail short, legs whitish, tarsus spurred; irides dark brown; beak black, sharp, and very much curved; plumage rich brown, mottled and spotted with a darker shade of the same colour; at the base of the neck and on each side of it was a greyish-blue patch; feet and claws very large and powerful.

To a casual observer these birds look like the hens of some species of Pheasant. They are known among the Malays by the name of "Burong salantung."

TURNIX PLUMBIPES (Temm.). The Black-breasted Bustard-Quail.

For some time I put down this Bustard-Quail as Sykes's *T. taigoor*; but apparently it is distinct from that species.

It is very plentiful throughout Western Malayana; but I rarely found more than two or three together; in fact, I generally flushed

them singly, and, as a rule, on ground covered with scrub or long grass. Like all the Quails, they are very difficult to put up, trusting to their legs more than their wings.

In my note-book I have written as follows:—

"Kuâla Kangsa, Pêrak, 8th June, 1877.—To-day I shot a female specimen of the Malayan *Turnix*, almost identical with *T. taigoor* of SYKES: my bird measures 6¼ inches; irides yellowish white; bill and legs bluish lead-colour; it has but three toes; throat and upper part of breast black; under-parts and the wings rufous brown, barred on the wings and lower part of the breast with black; head and neck freckled with black and white spots: claws white; weight slightly over 2 oz.

"When walking through the jungle I often flush these Quail. Small open patches appear to be their favourite resorts; and I very seldom find them in the paddy-fields, where the little *Excalfactoria chinensis* swarms."

Among the "lalang" grass round the barracks at Singapore, Bustard-Quail were very common, breeding during May, June and July.

On 1st July I found a brood of five young ones running about with their mother among the flower-beds in the Botanical Gardens, and on 24th August disturbed a family of them in the long grass close outside our mess; they could not fly more than a few yards at a time, so were easily caught.

One I carefully examined, though fully feathered, could scarcely fly at all, but ran at a great pace, and showed much cleverness in hiding itself by crouching flat on the ground, taking advantage of any hole or depression; its irides were straw-colour, like those of the adult.

I used to see the Malays in Pêrak employ these birds as decoys to catch others of their kind, much in the same way as Dr. JERDON in his "Birds of India" describes it as being done by the natives in the south of India.

The decoy, usually a hen bird, is enclosed in a small wicker cage, having an arrangement by which, on the breaking of a thread which is stretched across the bars, a net springs over the front of the cage. This contrivance is placed in a likely spot in the jungle: and the

wild Quails, attracted by the "calling" of the decoy, try to get at it, and, fluttering against the outside of the bars, break the thread, set free the spring-net, and are caught.

Dr. JERDON says that in India all the birds thus caught are hens, as are the decoys: unfortunately I neglected to see if such was the case in Pêrak; but if so; it conclusively proves that it is not sexual desire, but their pugnacity, that is so fatal to them. The female is the larger and by far the more handsome bird of the two, the male wanting the deep-black throat and upper breast, and being altogether less boldly marked.

GLAREOLA ORIENTALIS (Blyth.).

The Swallow-Plover is very common during the seasons of migration, arriving at the same time as the Golden Plover, *Charadrius fulvus*; but I never met with it at other times of the year. During March, and again in September and October, great numbers pass over the island of Singapore; but they are then so tame that it is poor sport shooting them: often they squatted so closely that I walked within a few yards before they would rise; then they frequently settled again after flying a short distance. Perhaps this extraordinary tameness was owing to the fatigue occasioned by migrating. I noticed that they were generally found in large flocks on cultivated ground, and were particularly fond of ploughed land, more especially if it was on a hillside.

The vernal migration takes place early in the year; in my notebook is the following passage:—

"Kuâla Kangsa, Pêrak, 22nd February, 1877.—This afternoon I paddled down the Pêrak river in a canoe to Kampong Saiyong, accompanied by H——, on our way getting a Golden Plover out of a pair which were sitting on a sand-bank in the middle of the river.

"A little further on, on another sand-bank, we saw an enormous flock of birds, which every now and then rose with shrill cries, and after flying a few yards settled again, squatting flat on the sand. Not knowing what they were, we stalked them, and bagged six, losing three more, which fell into the river and were swept away.

"At first I took them to be the European Pratincole, but now see, as stated by JERDON, that they differ from that species in having the tail less forked; they must be migrating, as on no former

occasion have I seen any here; and their being in such numbers, and so easily approached, makes it still more probable that they are on passage. When fired at the big flock broke up into small parties of from ten to twenty; but after a short time they all returned to the sand-banks. While on the wing, flying close over the surface of the water, the most noticeable points about them were their Swallow-like wings and white rumps."

In plumage the sexes are alike; but immature birds which I shot in Singapore during September were not nearly so decidedly marked as the adults, moreover they were much mottled and freckled with brown. The pectinated middle claw, large eye, wide gape, their flight, and the way they crouch flat on the ground, all seem to point to a relationship between these birds and the Caprimulgidæ.

SQUATAROLA HELVETICA (Gm.). The Grey Plover.

Identical with the European species. The Grey Plover is common among the islands and along the coasts of the peninsula from October to March, but appears to breed further north. On 13th April, 1879, I had over a dozen brought to me, which had just been caught on the coast a few miles south of Malacca; and of these one showed considerable signs of the breeding-plumage, its breast being much blotched with black. During October, November and December, some may always be shot on the shores of Pulau Ubin, Pulau Nongsa, and the other rock-girt islands near Singapore; a female which I shot off Pulau Ubin was sitting on an isolated rock in company with a large flock of Ringed Plover (*Ægialitis geoffroyi*).

CHARADRIUS FULVUS (Gm.).

The Eastern Golden Plover is very plentiful during the north-east monsoon, but goes north in April to breed, returning again to the south of the peninsula towards the end of September. In Pêrak, during January and February, I found them in large flocks on the edges of all the jheels, particularly those in the neighbourhood of Kôta Lâma, Saiyong, and Sengan; but they got scarcer in March. The 8th April was the latest date on which I shot one, which, in company with another, was sitting on a sand-bank in the middle of the Pêrak river; it had almost fully assumed the black breast of the breeding-season. In 1879, while stationed at Singapore, as late as 13th April, a Malay fisherman brought me a large cage full

of Terns and shore-birds, which he had netted on the sands near the mouth of the Moar river; and among them were several Golden Plovers, all in various stages of the breeding-plumage; so probably they nest somewhere towards the north of the peninsula, though in Singapore and the south they are most certainly migratory.

In Singapore, though no very large bags were to be made, they often, during October, afforded me a capital afternoon's sport. In the neighbourhood of Tanglin the best places for them were the Chinamen's gardens and the cultivated hills near Cluny; but there was also good ground near Changi, at Gaylang, and on the Trafalgar estate.

When shot at some distance inland they are very good eating; but a coast diet spoils them for the table: some I shot on the sea-shore at Pĕnâga, in Province Wellesley, were quite uneatable, having a strong, fishy, decayed-seaweed kind of flavour.

In my notes are many references to this species, among them the following:—

"Tanglin, Singapore, 2nd October.—Early this morning three Golden Plovers were running about our lawn-tennis ground, close to the public road; they were very tame, allowing me within a few yards before they rose, and even then flying but a short distance. In the evening, at dusk, while several of us were playing tennis, laughing and talking, a Golden Plover circled round two or three times, then settled on the ground in our midst. I never saw one so tame, but believe it was migrating, and so tired as to be regardless of danger and glad to rest anywhere."

ÆGIALITIS GEOFFROYI (Wagl.). The Sand-Plover.

Found in great numbers on the coasts of the peninsula during the north-east monsoon. Towards the end of November, 1879, I found enormous flocks of them at low tide on the shore of Pulau Batam; they were then all in the brown-and-white winter plumage. One, which I shot out of a flock of Charadriinæ which rose from a rock in mid channel between Pulau Ubin and Singapore, was 8¼ inches in length; irides dark brown; beak at front $\frac{19}{20}$ inch; legs black; tarsus 1⅛ inch; upper parts and streak below the eye dull brown; forehead, tip of tail, and the underparts white; date 10th January.

The summer plumage is very different from that of the winter time. In my note-book I find the following notes concerning two specimens obtained alive from the Malaccan coast on 13th April, 1879:—

"The two Sand-Plovers which were brought to me to-day differ much in appearance; both are *Æ. geoffroyi*. My identification has been confirmed by Mr. DAVISON; so there can be no mistake; but they are certainly very unlike one another, one being in the ordinary brown-and-white winter plumage, the other, a female, in the rufous colours of the breeding-season. This last, Mr. DAVISON tells me, is the only specimen in summer plumage that he has ever seen in these parts. The following is an accurate description of it:—

"Length 8½ inches, bill at front 1, tarsus 1½; bill black; irides dark brown; forehead, lores, ear-coverts, and streak below eyes black; spot on each side of forehead, the chin, throat, abdomen, margins of inner webs of the primaries, white; upper parts hair-brown, tinged with rufous, particularly on the head and neck; a broad band round the upper part of the breast bright rufous."

ÆGIALITIS MONGOLICA (Pall.).

Frequents the coasts during the north-east monsoon. On 23rd November I shot one out of a flock on the shores of Pulau Batam, near Singapore. Length barely 8 inches, tarsus $1\frac{3}{10}$, beak at front $\frac{3}{4}$; upper parts dull brown, tinged, particularly on the wing-coverts, with rufous; the forehead and underparts white, with a rufous tinge, deepest on the breast. It is rather like, but smaller than, *Æ. geoffroyi*.

ÆGIALITIS DUBIA (Scop.).

On 23rd November, 1879, I shot a specimen of this small Ringed Plover out of a party of five on the sandy strand bordering Pulau Batam. At first I thought it was *Æ. minuta*; but that bird has the basal half of the beak yellow, while in this the whole of it is black.

I shot another during November on the parade-ground at Tanglin, Singapore.

LOBIVANELLUS ATRONUCHALIS (Blyth.).

The Red-wattled Lapwing is common in Pêrak and Lârut, frequenting the edges of jheels and the swampy valleys in the jungle. I never found a nest; but they probably breed in the peninsula, as

I saw a pair near Kuàla Kangsa, Pêrak, as late as the first week in May. Earlier in the year I shot several in the neighbourhood of that place, also some few at a jheel near Sengan, lower down the river.

In my notes is the following passage:—

"Singapore, 21st November, 1879. This afternoon I shot a few Snipe and Plover in the swampy valley behind our barracks, also put up two Red-wattled Lapwing, one of which I shot. It is exactly like those I used so often to get in Pêrak; but here it is a rather rare bird, and one seldom hears its plaintive cry, so well rendered in Dr. JERDON's work by the words 'Did he do it! Pity to do it.' A male, shot at Saiyong, Pêrak, on 13th April, measured about 12½ inches in length, tarsus 3; beak red, black at its tip; orbits and wattles red; irides red-brown, legs yellow; head, neck, and breast deep black; ear-coverts, streak down each side of neck, band across upper part of the back, abdomen, and the tail white, the last broadly barred with black; upper parts and wing-coverts dull brown, glossed with metallic shades of purple and green; greater coverts broadly tipped with white; wing-quills black; the shoulder furnished with a short blunt spur; hind toe very minute. Its stomach contained vegetable matter and particles of quartz."

STREPSILAS INTERPRES (Linn.). The Turnstone.

About the middle of April, 1877, a Malay brought me a cage of eighteen or twenty Turnstones, which he said he had netted on the sands near the mouth of the Moar river; they were in most beautiful plumage.

I saw large flocks of Turnstones scuttling about at the water's edge on the beach at Pulau Nongsa during September, and shot one or two of them.

GALLINAGO STENURA (Temm.). The Pintail Snipe.

Although the European Snipe (*G. scolopacina*) is occasionally found, the one commonly met with in the Malay States is the Pintail Snipe (*G. stenura*), dozens (I think I may almost say hundreds) of it being obtained for one of the former. But in general appearance the two species are so alike that anybody not a naturalist, nor of a very inquiring nature, may easily shoot throughout a whole season in that land of the longbills, Province Wellesley, without

knowing that his spoil differs in the least from the well-known Snipe of the British Isles.

But if, while resting from his labours after a few hours' plodding through mud and water under the blazing sun of those parts, he will turn out his well-filled bag and carefully examine its contents, it will be found that, with hardly an exception, the birds are "Pintails."

The tait, instead of being of soft rounded feathers, as is the case with the English bird, has eight rigid pin-like feathers on either side, though I have seen specimens in which these stiff feathers were but seven in number. This is the most marked characteristic of the species, and at once determines the identity of a specimen; but the Pintail also has the axillary plumes more richly barred than its European brother—though, unless one had some of each kind laid side by side for comparison, the differences between the two species would probably pass unobserved.

It is only at a certain season that Snipe abound in the Malay peninsula: from May to July, both months inclusive, it is hard to find a single bird; but about the middle or end of August they begin to arrive in Province Wellesley and Pulau Penang, extending to Malacca and the extreme south of the peninsula, including Singapore, ten days or a fortnight later, though they are not found in great numbers in any of these places until later in September.

However, it is impossible to lay down a hard and fast rule, as the migration is much influenced by the weather; but it may safely be said that the great body of the Snipe do not come south until the commencement of the wet and stormy period which proclaims the breaking-up of the south-west monsoon.

Towards the end of April they return north to their breeding-grounds; and I doubt if any remain to nest in the peninsula, though in Pêrak I have shot a few stragglers as late as the second week in May.

With reference to the habits of the Pintail, my experience is that, as a rule, they are not found in any number in the paddy-fields—that is to say, when the crops stand high; and though I once, at Pénâga, on November 6, 1877, in about three hours, bagged twenty-five couple on paddy-land, still it was the only occasion I am able

to record; and then, I believe, their presence was due to the paddy being scattered about in patches and much mixed up with reeds and coarse herbage.

Their favourite ground is where the jungle has been burned, and the vegetation, just beginning to spring up, shows in green shoots above the blackened soil. Another sure finding-place is rough land, with bushes, small pools of water, and moist places scattered here and there; but everywhere it will be found that during the intense heat of the day the Snipe avoid the open country, and seek shelter from the sun under thick bushes, or in the shade of high jungle. They then lie very close, and when flushed rise with a listless flight, not unfrequently settling again after flying eighty or a hundred yards; but of course this is not the case in districts where they are much shot at and disturbed.

Though undoubtedly, as a rule, the Malay Snipe are not so wild nor so active on the wing as is the European species, still they afford excellent sport, and are by no means easy to shoot, particularly during the early morning, when, revived by the cool night air, they dart and twist along at a great pace; also among bushes it requires very quick and straight shooting to make anything of a bag.

As soon as the sun gets low they leave the covert and scatter themselves all over the country in search of food; often on moonlight nights, when out in the jungle after pig, on crossing open pieces of ground where, during the day, not a bird could be found, I have heard Snipe rise, squeaking on all sides. One most keen sportsman of my acquaintance sallied forth on one of these very bright nights; but, though the Snipe swarmed, he returned without having done more than frighten them—not to be wondered at, considering how deceptive is the light of even the most brilliant tropical moon.

During droughts, when the ground is parched and cracked by the heat, the Snipe probe the buffalo-dung, perforating the heaps with thousands of small holes in their search after the worms which collect beneath.

I think that there can be little doubt that Province Wellesley, opposite the island of Penang, is by far the best Snipe-ground in

the peninsula, probably owing to its being extremely flat, well watered, cleared of jungle, and perhaps to its being very near the limit of the migration south. To a very great extent it is covered with paddy-fields; and on the rough uncultivated land bordering these the Snipe are extremely plentiful, enormous numbers often being shot in a day. One morning early in November, 1877, I bagged thirty-five couple by midday, and had quite as good sport on other occasions; but during the season of 1879, which was an exceptionally good one, the birds simply swarming, far larger bags were made, an officer of my regiment having bagged fifty-six couple to his own gun on one day, and fifty-four on another. But this represents good shooting: for it must not be imagined that the birds can be knocked down with a stick. Far from it, anything over twenty couple means really straight shooting and hard work, as the walking is bad and the heat intense.

A good retriever is very useful; but few dogs can stand the sun for any length of time. I used to keep mine closely clipped, except his head and a broad stripe down his back, which proved a great protection to his spine; but in spite of all precautions, after a time, he got altogether out of condition. Without a dog birds are often lost, particularly on bushy ground, though the Malay boys, sharp little urchins, with more intelligence than clothes, who follow and carry one's cartridges, are generally very good at marking down the dead and wounded; still a dog is preferable to the best of human retrievers.

Near Thaipeng, in the native state of Lârut, I was once one of a party who attempted to shoot Snipe from elephants; but I cannot advise anyone to go and do likewise, at least if their dinner depends on what they kill. It happened thus. We had been all day in the jungle after a rogue elephant, which had done considerable mischief; but he proved too much for us, and got safely away to the hills without giving anyone the slightest chance of a shot, though at one time we were close to him. In the afternoon, on our way home, we had to pass near a celebrated Snipe-ground of considerable extent, swampy, and much overgrown with low bushes. "Let's try and shoot some Snipe from our elephants' backs!" exclaimed one of our number. The novelty of the thing pleased all; so off we

started; and a queer sight it was. Five elephants advanced in line, about a hundred yards apart, each carrying two guns; while in the intervals, but a little in the rear, came several Sikhs of the military police of the district, fine tall fellows in scarlet turbans. These followed us, nominally to pick up the spoil; but, unless it takes five men to carry one Snipe, their labours were light. The Snipe were very plentiful, and for half an hour there was a tremendous banging; but I need hardly say that the result was almost nil. Personally I expended quite thirty or forty cartridges for two Snipe and a green Pigeon; all together I do not believe the ten of us averaged a bird apiece. But it was not to be wondered at; for as "scaipe! scaipe!" resounded and up went one's gun, the elephant would make a tremendous plunge, and one's shot went anywhere but towards the object aimed at; often, I expect, much nearer the head of our mahout, or some of our Sikh followers, than was at all pleasant for them. I know it would have taken a good deal to induce me to change places with the mahout, perched as he was on the neck of the elephant, with my companion and myself slung in baskets on either side of the great lumbering brute, and firing away as hard as we could. As we sat sideways in a small cane basket, with our legs dangling over the side, straight shooting was almost an impossibility: for, to say nothing of the jolting of our animal, I, on the off-side, could fire only at birds rising to my left front, and then in a very cramped position; and the man on the near side had similar difficulties to contend with. Between these two firing-points squatted the unfortunate mahout: he never made any remark, except to his charge; but I expect he offered up a prayer of thanksgiving to Mahomet when the whole performance was over and he found his head still on his shoulders.

Rhynchæa bengalensis (Linn.).

The Painted Snipe, as it is called, though not really belonging to the true Snipe, is a bird frequently met with by the sportsman in Malaya.

The Painted Snipe *may* be a resident and breed in the Malay peninsula, as is the case in India, though my experience inclines me to think it migratory. In any case, if not a true migrant, it certainly moves about the country, only appearing in certain districts at par-

ticular seasons. I never heard of it nesting in the peninsula, and never even saw it except during the north-east monsoon, when it is fairly plentiful, frequenting the same ground as the common Pintail. I have shot Painted Snipe in the north of Pêrak during the months of January, February, and March, and found them in considerable numbers further south during October.

Out of a bag of twenty couple of Snipe shot in Province Wellesley on November 9, more than half were of the Painted species. They seem to collect in small parties; for when one is flushed two or three more are generally to be found somewhere near; but they rise with a heavy Owl-like flap, as a rule settling again within forty or fifty yards. Thus offering an easy mark, and being moreover poor eating, they are scarcely worth shooting.

The chief characteristics of the Painted Snipe are the beautiful ocellated plumage and the Curlew-like bill, curved downwards at the tip, also shorter than that of the common Snipe. The female, with the handsome chestnut throat, is larger and more brightly-coloured than the male.

GALLINAGO SCOLOPACINA (Bp.).

Compared with the Pintal species, the common European Snipe is rare in the Malay States.

LIMOSA ÆGOCEPHALA (Linn.).

Personally I did not meet with this Godwit; but Mr. DAVISON showed me a specimen caught with birdlime, at the same time as two Whimbrel, on the rocks off Changi, on the north coast of Singapore.

NUMENIUS ARQUATA (Linn.). The Curlew.

Plentiful along the coasts during the north-east monsoon. I shot a few off Changi and among the islands in the Johor Straits, but found them just as well able to take care of themselves, and just as hard to get at, as in cooler climes.

Referring to a visit I made during November to Pulau Nongsa, a small island off the south coast of Singapore, in my note-book is:—

"The tide being very low, a broad belt of coral-reef surrounded the island, affording feeding-grounds to hundreds of shore-birds of all kinds: so we landed, or rather waded ashore, in hopes of getting at the Curlew and Plover, of which we saw a great many; but, as

usual, the former were exceedingly wary, and, without giving us the ghost of a chance, made off to a distant sandbank, loudly uttering their shrill cries, as if to deride the unsuccessful sportsman and warn all other birds of his approach."

NUMENIUS PHÆOPUS (Linn.). The Whimbrel.

Flocks of Whimbrel frequent the coasts during the north-east monsoon. In my notes I find:—

"Singapore, 26th November, 1879. The other day, while shooting Pigeons on Pulau Betam, we put up a large flock of Whimbrel from the belt of mangroves bordering the shore, but did not get a chance at them; but next day Mr. D.——bagged eight in two shots."

TRINGA MINUTA (Leisl.). The Little Stint.

I shot one of these Stints on Pulau Batam, near Singapore, on 25th November, 1879; it was a male in winter plumage, length about 6½ inches; head and the upper parts whitish brown, the feathers dark-shafted; the two central tail-feathers dark brown, the others dusky, all narrowly edged with white; the underparts white, dusky on the breast; bill at front ¾ inch, tarsus ¾.

TOTANUS GLAREOLA (Linn.). The Spotted Sandpiper.

This Sandpiper is by no means a rare bird; I shot several in Pêrak and in Singapore. A female, killed at Kôta Lâma, Pêrak, on 19th April, 1877, measured 9 inches, tarsus 1½, beak at front 1¼; legs dull green; irides dark brown; head, upper parts, and the wings dull brown, spotted with grey; a dusky streak passes from the base of the upper mandible to the eye; supercilium and underparts white, dusky on the breast and much streaked with brown; the upper tail-coverts pure white; tail barred with dark brown. A specimen shot in Singapore during November was less distinctly spotted than the above.

In my notes I find:—

"Singapore, 18th November, 1879. This afternoon, while Snipe-shooting in the Mount Echo valley, close behind our barracks, I came on a large flock of Spotted Sandpipers (*T. glareola*) feeding in the swampy fields, which are awful walking, letting one through at every step over one's knees into soft filth. The Sandpipers were rather wild, rising with shrill cries as soon as I got within forty or

fifty yards, but settling again after flying round and round for a few minutes. Feeding with them were a great many Yellow Wagtails (*Budytes taivanus*); and I got several specimens of both them and the Sandpipers at one shot."

TRINGOIDES HYPOLEUCOS (Linn.).

The common Sandpiper is plentiful in Singapore and the neighbouring isles; during November, 1879, I found great numbers of them on the shores of Pulau Nongsa and Pulau Batam, and on many occasions saw them settle on the fishing-stakes, which stand five or six feet above the surface of the water. In China I once saw a Sandpiper dive and swim under water with wonderful ease. I find the following notes, made at the time, in my journal:—

"6th October, 1878, Kowloon, near Hongkong. Towards evening we left the hills and returned to our boat, near which, on the sands, we shot a few Waders. One of these, a Common Sandpiper (*T. hypoleucos*), fell wounded into a brook; and my dog ran to retrieve it; but just as he was going to pick it up, it dived like a Duck and swam *under* water a distance of over twenty yards. The stream was of no width, and the water as clear as crystal; and standing within a couple of paces, I most distinctly saw the bird propelling itself with its wings as it swam beneath the surface of the water."

PARRA SINENSIS (Gm.). The Pheasant-tailed Jacana.

Late one evening in the first week in May, while shooting near Saiyong jheel, on the Pêrak river, I was stalking a flock of Teal which had gone down on some swampy ground bordering the water, when something white darted past, which, in the dark, I took to be a Goose Teal, so fired, but found that instead of a Teal I had killed a most beautiful specimen of this handsome bird, the only one I came across in the peninsula, though in India, I believe, it is far from rare.

It was a male in summer plumage; length 17½ inches, of which the tail of four long tapering black feathers measures 5½; irides brown; beak, legs, and toes plumbeous, the toes are very long and slender, and set like the spokes of a wheel, hind claw 1⅛ inch; underparts white, barred irregularly with black; a peculiar golden mane passes along the back of the neck; the back and scapulars are brown with a bright purple gloss; wings pure white,

excepting the first primary, outer webs of second and third, and borders round the ends of the secondaries, which are black; wing-feathers very lanceolate, the first primary has at its tip a peculiar filament, the fourth is very attenuated and pointed; wing-coverts barred with grey.

PORPHYRIO CALVUS (Vieill.). The Purple Coot.

One afternoon, while Teal-shooting in Pêrak, I was wading about a jheel overgrown with weeds and aquatic plants, among which I shot a specimen, my only one, of this Coot.

Its plumage reminded me much of *Porphyrio cæruleus* of Europe; but it is smaller than that bird, also its beak and legs are not of such a bright red. It feeds principally on weeds and other green substances. The stomach of the one I shot was very muscular, and contained vegetable matter and a quantity of sand; but possibly they occasionally prey on the young of other birds, as their relation, *P. cæruleus*, which I shot in Sicily, had there the reputation of killing young wildfowl; also, when visiting Mr. WHAMPOA, a Chinese gentleman residing in Singapore, he showed me a very handsome pair of these Coots in his garden, but said he was obliged to confine them in a cage, as, when let loose, they killed his chickens.

My Pêrak specimen, a male, shot on 9th May, 1877, was 17 inches in length; neck, throat, and upper parts of the breast pale greenish blue; back of neck and the abdomen deep purple; vent freckled with grey; under tail-coverts white; wing-coverts light blue; legs, beak, and frontal plate dull red; back and scapulars dark brown tinged with green and blue. Soon after death the beautiful blue of its plumage faded.

There were two of these Purple Coots in the Botanical Gardens, Singapore, also specimens in Raffles Museum.

GALLICREX CRISTATA (Lath.). The Crested Water-cock.

This Water-fowl is very plentiful, breeding among the jheels and reedy swamps of Western Malaya. Personally I never found a nest, but in Pêrak, during April, have shot males with the red frontal plate, assumed only during the breeding-season, fully developed. The following is from my note-book:—

"Kuâla Kangsa, Pêrak, 31st March, 1877. This evening, in

a very wet paddy-swamp, I shot a bird uncommonly like a Coot *(Fulica atra)*, except that its toes were very long, and without lobe, web, or any other aid to swimming; it flew with a heavy flapping flight close over the tops of the reeds. It was of black plumage, but a good deal marked with a rusty brown; also it had a little white on its shoulders; irides dark brown; length 15 inches; claws long, very curved and sharp; legs yellowish green, as was the beak, which extended up the forehead in the form of a reddish frontal plate; so I take the bird to be a young male in breeding-plumage; in the adult the iris is crimson."

Again, in my notes I find:—

"Singapore, 22nd December, 1877. To-day I got four couple of Snipe in the valley near Cluny, also shot a female specimen of the Water-cock *(G. cristata)*, which Drake flushed out of a thick patch of reeds standing in water nearly two feet deep. Though at different times I have shot dozens of these birds, I never remember finding them anywhere but in very wet places; in Pêrak they were exceedingly plentiful on all the jheels, but kept to the thick reed-beds. During last spring I shot a great many on the jheels near Saiyong and Kota Lama, and found them very good eating, though in that respect not equal to the little Goose Teal.

"The great difference in size of the sexes of this bird is very noticeable: the female I shot to-day is 13 inches in length; irides dark brown; legs and beak dull green, the latter reddish at its base; head and the upper parts dark brown; the feathers of the back, also the tertiaries, broadly edged with pale brown; chin, throat, supercilia, outer web of first primary, and the shoulder white; underparts pale rufous brown, narrowly barred with dusky brown, particularly on the flanks."

The male is a larger bird, about 16 inches in length, and, when mature, has red irides and its plumage very dark.

In Singapore I once put up a Water-cock which flew a short distance, then settled on the top of some bushes eight or ten feet above the ground, a most unusual thing for one of these birds to do. It looked most strangely out of place; so I shot it in order to be sure of its identity.

ERYTHRA PHŒNICURA (Penn.).

The White-breasted Water-hen, though by no means rare, is not very often seen, owing to its extreme shyness; it frequents thick covert near water. At Singapore I occassionally saw it in the hedge-rows near the lake in the Botanical Gardens.

During November, 1879, I shot several specimens on Pulau Batam; also during 1877 I got many in Pêrak and Lârut. One of the Pulau Batam birds was 12 inches in length; beak yellowish green, reddish on the ridge; legs dull green; tarsus 2¼; upper plumage dull bluish black with a slight green tinge; face, throat and breast pure white; vent and under tail-coverts chestnut. This specimen, being immature, had the irides brown: in the adult they are deep crimson. I once saw one these birds settle on the upper branches of some trees; but they were of no height about ten or twelve feet at the outside.

PORZANA CINEREA (Vieill.). The Small Water-Rail.

I never came across this Rail on the mainland; but on Singapore in certain localities, notably the Mount Echo valley, they were very plentiful, particularly during September and October; but perhaps being out Snipe-shooting a great deal during those months I noticed them more than at other times, when I did not pass so much time in their resorts.

My notes are as follows:—

"Singapore, 7th October, 1879. Passed the afternoon Snipe-shooting in the Mount Echo valley, wading through the swampy grass-fields knee-deep in the most horrible filth—the sewage of Singapore, which is carried out from the town in large wooden tubs by the Chinese coolies and emptied over the fields as manure. The smell is most disgusting; but the valley being capital collecting-ground, in spite of the deep wading and unsavoury odours, I frequently pay it a visit.

"To-day I got some Snipe (*Gallinago stenura*), Bitterns (*Ardetta cinnamomea*), Golden Plover (*Charadrius fulvus*) and smaller Rails (*Porzana cinerea*); these last were very plentiful in the deepest parts of the swamp, and nearly every bush held one. When flushed they flew with a weak flight, with their long legs trailing behind them, for about fifty yards, then dropped and ran

for the nearest covert, from which it was not easy to get them up a second time.

"A female I dissected had the ovaries much developed, stomach very muscular, full of grass-seeds, a fine thread-like weed, and a quantity of sand.

"Length 7½ inches, tarsus 1½; irides red, orbits scarlet; legs yellowish green, soles yellow; beak yellowish green, orange at its base; upper parts, the wings, and tail dull brown, with a plumbeous tinge on the head and neck; underparts, also a streak under and over the eyes, white; sides of the neck and breast bluish grey. Another I shot had the irides a reddish brown colour."

At sunset on any fine evening during September dozens of them were to be seen feeding out in the open on the swamps below Mount Echo, scuttling off in all directions directly they were disturbed.

Hypotænidia striata (Linn.).

This common Water-Rail is apparently more abundant in the south than in the north of the peninsula, as I did not meet with it in Pêrak, while in Singapore I found it, at all seasons, the most common of all the Rails. I got specimens every day I went Snipe-shooting, their favourite resorts being very wet swamps covered with low bushes.

A female I shot on Pulau Batam, on 30th September, 1879, was 10 inches in length, tarsus 1¾; irides dark brown; beak fleshy red, dusky on culmen and tip; legs dull green. Its stomach contained a quantity of dark-green substance, among which I detected the fragments of insects and the shelly covering of a chrysalis of some sort.

Another female, shot in Singapore 30 September, 1877, was slightly smaller than the above, in other respects similar. Top of head, the nape, and a streak down each side of the neck chestnut, marked with black on the crown; the wings and upper parts olive-brown, covered with narrow wavy bars of white, edged with black; the chin and throat dull white; a streak below the eye, the sides of the neck, and the breast lead-grey; abdomen, dull brownish grey barred, particularly on the flanks, with white.

RALLINA FASCIATA (Raffles.).

This handsome Banded Rail is decidedly rare; I never shot one, and saw very few in the Malacca collections. It can easily be identified by its richly banded plumage. It is smaller, also has the olive of the back more rufous than *Porzana ceylonica*.

LEPTOPTILUS ARGALA (Lath.).

The well-known Adjutant bird of Anglo-Indians is found along the Malayan coasts, but, I think, not so plentifully as the rather smaller and more darkly plumaged *L. javanicus*.

In August, 1877, I saw several Adjutants on the mud at the mouth of the Moar river.

LEPTOPTILUS JAVANICUS (Horsf.). The Malay Adjutant.

Much more common in the Straits than the last-named species: both, however, there go by the name of "Adjutant bird." I found it plentiful on the mud-flats at the mouths of most of the rivers on the west coast particularly, about the bar at the entrance to the Lârut river; but I never shot one, as on every occasion my baggage was much too limited to allow room for stowing away so bulky a bird.

It is easily tamed, and invaluable as a scavenger, particularly in a hot climate, where things do not improve by being kept. When quartered at Tanglin, every time I drove into Singapore I passed a pair of these Adjutants, which lived on the grass-plot at the roadside close to the town. They seemed very contented with their lot, never straying far away from one place, and were usually to be seen either perched on a railing, apparently buried in thought, or else gravely stalking along the edge of a tidal ditch bordering the road, on the look-out for frogs, fish, or pieces of offal that might come drifting down the stream. My dog frequently used to rush and bark at them, when they put themselves into the most absurd attitudes, if very closely assailed bending forwards with their wings upraised, necks extended, and enormous bills wide open, presenting a most grotesque appearance.

The detachment of my regiment stationed at Penang bought a pair of these Adjutants from a Malay, and kept them on the race-course just outside the Mess. The following account of the birds, their manners and customs, is given me by an officer of the

detachment, who watched them daily :—

"In June, 1877, when at Penang, S. S., B—— purchased, for the sum of three or four dollars, two Adjutant birds of a black and white colour; head and bill of a yellowish colour, as was also the neck; their bills were nearly a foot in length; they possessed but very few feathers on the head and neck—in fact only a few sprouting hairs: their backs and wings were of a greenish black, and their breasts of a dirty white colour. The birds stood about three feet in height.

"They were never kept in confinement, and from the very first were allowed to roam over a large open expanse of ground, but never seem inclined to stray far, and very seldom even attempted to fly; and when they did it was rather a failure, and consisted of a succession of bounds for about fifty yards, after which they appeared to be quite exhausted.

"They were curious birds to watch, and always gave one the idea that the surroundings had but little attraction for them, as they would spend more than half the day standing motionless opposite each other, bill to bill, and with both wings outspread, forming a most ludicrous picture; sometimes they would stand like this for an hour or more; but occasionally one of them raised and stretched out one of its legs as if it were stiff; otherwise they would scarcely move a muscle. I do not remember ever hearing either of them utter a sound, though we often listened.

"They were very coarse feeders, and did not consider much before they fed, either as regards quality or quantity. On one occasion I threw to one of them, as fast as I could, one by one, several small fish about six inches in length; these he gulped down to the number of thirty-two, and even then did not appear satisfied.

"After they had been with us about a month, one morning one of them looked rather sorry for itself, and basked in the sun with outspread wings for several hours; but later in the day he lay down on the grass with his eyes closed, evidently very sick; by him stood his brother, quite unconcerned, and, as it seemed to us (for we watched him closely), unaware of anything unusual

being the matter. They remained like this till late in the afternoon, when we saw the healthy bird put his head on one side, and, looking inquisitively at his sick comrade, proceed to stir him up with his back, but without making him move; and on going out we found him to be dead. To discover the cause of death a post-mortem was decided on; and B—— and myself set to work at once, and found in the bird's stomach, which was much inflamed, the legs and claws of a large Fowl, quite undigested, and probably the cause of its decease.

"The amusing part of the post-mortem was that the surviving bird stood close by to see us cut up his brother, and evidently with much pleasure; for he eagerly watched us slice off great lumps of meat, and was delighted when they were thrown to him, gobbling them up in no time; after a good meal he stalked away very well satisfied with the afternoon's performance, apparently thinking what a pity it was he had not a brother dying every day."

ARDEA SUMATRANA. The Malay Purple Heron.

Plentiful in the jheels and paddy-swamps in Pĉrak, particularly during April, when I found them in a great numbers among the reeds of the large jheel near Saiyong; as I waded about I used to see them, with their long necks stretched out and heads raised above the reeds, most intently watching my movements.

They were rather wary, though when flushed they generally flew but a short distance, and settled on the upper branches of some large trees bordering the jheel; then, under cover of the jungle, they were easily stalked. They reminded me much of *A. purpurea*, the European Purple Heron, except that they were not nearly so richly coloured as that bird. An immature female, which I shot at Kota Lama jheel, Pĉrak, on 5th April, 1877, measured about thirty-six inches in length, bill at front 4¾, tarsus 5; crown of head dull bluish grey; chin and throat white; face and neck rufous brown, the latter spotted longitudinally with dark brown; upper parts dull brown, the feathers edged with rufous brown and slightly glossed with purple and green; tail and wing slate-grey; wing-coverts ashy, with pale rufous edges to the feathers; abdomen yellowish white. It had been feeding

on small fishes.

Herodias garzetta (Linn.).

I frequently met with this Egret among the swamps in Singapore, generally in flocks of from fifteen to thirty.

My notes record:—

"Singapore, 21st October, 1880. To-day, while shooting Snipe in the swamp behind the barracks, I put up a party of twenty white Egrets, and, as they passed overhead, brought down one of them, a fine specimen of *H. garzetta*, in pure white plumage, but of course, at this time of the year, without the crest and the dorsal and pectoral plumes of the breeding-season.

"In length it is 24 inches, bill at front $3\frac{1}{6}$, tarsus 4; legs black, blotched with green; toes green; soles yellow."

Buphus coromandus (Bodd.).

The Cattle-Egret is very plentiful throughout the Malay Peninsula; the following are some of the many references to it in my note-book:—

"Kuâla Kangsa, Pêrak, 17th February, 1877. Buff-backed Herons are very common here; wherever there are many buffaloes large flocks of them are always to be seen, either walking about among the animals' legs, or else perched on their backs picking out ticks and other vermin. This afternoon, close to Kôta Lama, I shot a female specimen: length $19\frac{1}{2}$ inches, beak at front $2\frac{1}{4}$, tarsus $3\frac{1}{2}$; plumage white, with the exception of a faint buff tinge on the head and nape; irides yellow; legs black; beak reddish yellow; in short, the bird was in almost perfect non-breeding plumage, though another, which I shot out of the same flock shows traces of the buff back. Every evening at dusk a large flock of these Egrets fly across the river and roost in a clump of trees exactly opposite our camp."

"Singapore, 4th November, 1880. Leaving Tanglin directly after tiffin, I followed a jungle-path for a mile or two till it brought me out on an open swamp, a branch of the Mount Echo valley. Quietly parting the bushes, I looked out into the open, and found myself quite close to a large flock of Cattle-Egrets, which, unaware of my presence, were stalking about the swamp picking up larvæ and aquatic insects. After watching them for several

minutes, I stepped out from my hiding-place and, as they rose, brought down a couple. The birds were so confused at my suddenly and so unexpectedly appearing almost in their midst, that they flapped about in all directions, not knowing which way to go, and gave me easy shots. One, struck by a single pellet, which grazed the top of its head, seemed to be completely dazed, and, though in other respects untouched, made no attempt to fly away nor even to walk, but stood bolt upright, quite motionless, and stared vacantly at me in a most idiotic manner: I suppose it was suffering from concussion of the brain.

"Both of the birds I shot were in pure white plumage, except a slight tinge of buff on the head; the beak was orange, at front 2¼ inches; orbital skin greenish yellow; irides yellow; legs black tinged with green; soles green; tarsus $3\frac{5}{16}$ inches. Their stomachs contained large spiders, several grasshoppers, dragon-flies, and small insects."

"Kuâla Kangsa, Pêrak, 8th April, 1877. To-day I shot in the country round Saiyong, and on the large jheel saw several Herons (*Ardea sumatrana*); a few Teal, and literally hundreds of Cattle-Egrets; the last are becoming of a ruddy brown colour on the head, neck and breast, a sure sign of the approach of the breeding-season."

BUTORIDES JAVANICUS (Horsf.).

Common. I got several in Pêrak. For many weeks one resorted daily to the river-bank just below our camp at Kuâla Kangsa, and I often watched it fishing; at length, doubtless thinking itself in a dangerous neighbourhood, it took itsef off to other grounds.

I also found this species plentiful among the islands of the Singapore archipelago. In my notes, in a description of a trip to Pulau Mongsa, is the following:—

"23rd September, 1880.....I found Pulau Mongsa to be about half a mile long by less than a hundred yards wide, thickly wooded, but fringed with a broad coral reef, at low tide of considerable width. Near its shores were long rows of fishing-stakes projecting some feet out of the water, on which sat hundreds of small green Herons (*Butorides javanicus*). On our

approach they rose in regular flocks; and, so as to be certain what they were, I shot three or four. They flew very close to the surface of the water."

ARDETTA FLAVICOLLIS (Lath.). The Black Bittern.

Personally I never shot this handsome Bittern in the Malay States; but I saw skins in Malacca collections. I killed one or two in the neighbourhood of the Canton river, South China, where I found them in thick reeds and not easily flushed.

ARDETTA CINNAMOMEA (Gm.). The Chestnut Bittern.

I found this small Chestnut Bittern plentiful in Singapore, and also on the mainland, and shot many specimens in Pêrak, Lârut, Province Wellesley, and Malacca, generally flushing them in paddy-fields.

A female, which I shot at Singapore on 30th September, 1877, was about 14 inches in length, bill at front $1\frac{1}{16}$; tarsus $1\frac{3}{4}$; irides yellow; bill pale greenish yellow, dusky on the ridge; soles pale yellow; upper parts and the tail ruddy chestnut, but much variegated, many of the feathers of the wing-coverts and back being brown with pale yellowish margins; top of head dusky; chin whitish; pectoral gorget of ruddy yellowish-brown feathers with dark brown central streaks; under-surface of the wings ash-grey with a delicate pink tinge.

Undoubtedly this was a young bird, being of such mottled plumage; moreover it was of much smaller dimensions than an adult, at least according to JERDON's description.

Another specimen, which I shot during May in the neighbourhood of Kuâla Kangsa, Pêrak, was of an almost uniform chestnut colour as regards its upper parts, but brightest on the wings and tail, and becoming brown on the back; the top of the head had a dusky tinge; underparts yellowish white; pectoral gorget boldly marked with longitudinal reddish-brown streaks; under-surface of the wings delicate pink-grey; bill at front 2 inches, in colour, yellow, the ridge dusky; legs greenish yellow; irides bright yellow, orbital region green.

ARDETTA SINENSIS (Gm.).

Certainly not so common as *A. cinnamomea*, still by no means rare in reedy swamps and wet paddy-fields. It is easily distin-

guished from *A. cinnamomea* by its wing-quills and tail being dee
blue-black instead of chestnut.

One which I shot at Singapore on 12th November, 188
measured 15 inches in length; tarsus 1¾; irides yellow; legs an
beak pale yellowish-green, the latter dusky on its ridge; beak fro
2¼ inches.

Another, from Kôta Lama, Pêrak, 22nd March, 1877, was of simil
dimensions; top of head, the wing-quills, and tail black; face an
the upper parts cinnamon-red, brightest on the back of the neck
wing-coverts pale yellowish brown; underparts pale yellowis
white.

GOISAKIUS MELANOLOPHUS (Raffles). The Tiger Bittern.

I only once met with this magnificent Bittern, getting a sing
specimen, a female, near Changi, Singapore.

Length about 20 inches, beak at front 2, tarsus 2 7/12; top o
head and pointed crest, passing over the nape, bluish-black; ta
brownish-black; rest of the plumage chestnut, brightest on th
face and sides of neck; the back and wing-coverts freckled wit
wavy black lines; pectoral plumes creamy brown, dashed wit
black and chestnut streaks; the abdomen and vent chestnu
richly marked with irregular black and white bars; under tai
coverts white irregularly marked with dark brown; wing-quil
bluish-black, the terminal portions chestnut, and the extreme tip
whitish.

DENDROCYGNA JAVANICA (Sykes.). The Whistling Teal.

This bird may be called the Duck of the Malayan Peninsula.

Though a migrant, it is found at certain seasons throughout a
the Malay States; and I do not believe its breeding-grounds ca
be far north of lat. 5° N., as the migration from the lower o
southern half of the peninsula does not take place until late i
June, and a few months later the birds are back again. Durin
the winter months, or, to speak more correctly, during the nort
east monsoon, these Ducks collect in large flocks on the jhee
and flooded paddy-fields. In Pêrak I found them particularl
partial to small weedy lakes surrounded by thick jungle; and i
one of these, near Saiyong, I used to see them literally in hun
dreds from February to April; but towards the end of the follo

ing month they got very restless, and by the middle of June most of them had disappeared, probably having gone north to breed.

I think there is little doubt that some few remain to nest near the banks of the Pêrak river, in the vicinity of Kuâla Kangsa, as at the end of June, after the main body had left, I occasionally came across stragglers in the ruddy breeding plumage. Moreover, Mr. Hugh Low, H.B.M.'s Resident at Pêrak, told me that the natives brought into Kuâla Kangsa young birds but a few weeks old, assuring him that they had been caught in the neighbourhood. This happened in January or February; so I suppose the birds breed from August or September till early in the year—that is, during the rainy season.

One cannot base conclusions on the habits of semidomesticated individuals; but it is worthy of notice that several of these Whistling Teal which, a few years ago, were turned out with clipped wings on the artificial lake in the Botanical Gardens at Singapore, though, having perfectly recovered their wings, they daily fly about the islands in search of food, still do not migrate, but remain and breed, and during September I saw several young ones swimming about with their parents. There is but little, if any, difference in the plumage of the sexes, and very slight seasonal change, though towards July specimens I shot were certainly more ruddy than earlier in the year.

During the heat of the day the Whistling Teal keep principally on the jheels, among thick reeds, and seem particularly fond of the small open pieces of water shut in by high rushes which are found in all large reed-beds. This makes them fairly easy to get at; and on several occasions, by wading quietly through the water, waist deep, the reeds concealing my head and shoulders, I came on them unawares and killed several at a shot—a great addition to one's larder in a country where fresh meat was not to be got every day.

When on open water I found them by no means easy to stalk; and even in places where I much doubt if a gun had ever been fired and they were but little disturbed, after one or two afternoon's shooting they became exceedingly wild and difficult to get near. The Malay bird can be easily distingnished from the other

species of *Dendrocygna* by its small size; out of the dozens whic I shot at different times I do not think one ever exceeded 1 inches in length.

A male shot at Kôta Lama, Pêrak, on 17th February, 1877, was 1 inches in length; irides dark brown, orbits bright yellow; leg and beak bluish-black; head and neck dull brown, the former dar on the crown; chin whitish; underparts ruddy brown, except th vent and under tail-coverts, which were whitish; wings black lesser coverts and the upper tail-coverts rich chestnut; back dusk black, each feather terminating with a broad band of rusty brown.

NETTAPUS COROMANDELIANUS (Gm.). The White-bodied Goos Teal.

The beautiful, and most appropriately named, little Goose-Tea is exceedingly plentiful among the jheels and swamps of the main land; but I never met with it on Singapore or any of the island along the coast. In many respects it is very Anserine, whence its name, having the short high bill, pure white colouring, and hoarse cry of the Goose tribe.

The Goose Teal is generally found in small parties of from four to ten, often associating with the Whistling Teal; and I have on several occasions got specimens of both species at one shot.

They seem to prefer open sheets of shallow water to thick cover, but on being disturbed become very shy and retire to quiet creeks or back waters surrounded by jungle. Though I often found them on flooded meadows, I rarely (in fact do not think I ever) saw them actually on dry land. Their legs are so short and set so far back that probably they seldom attempt to walk, but on the water are quite at home swimming and diving exceedingly well, and when slightly wounded are very hard to secure.

I remember once trying, for nearly half an hour to catch a Goose Teal which fell winged into a shallow pool. It stayed under water a marvellous length of time at each dive, and when it did rise to the surface showed only its head, disappearing again the instant I moved; but at length I tired it out and consigned it to the bag. These birds also have the power of sinking their bodies below the water till nothing but their head is visible, hoping thus to escape notice.

One evening in Pêrak, while out bird-hunting, I came upon a small pool completely excluded from the outer world by the most luxuriantly growing jungle. From the overhanging trees long slender creepers hung down in tangled masses to the surface of the water, which was almost covered with aquatic plants. To complete this beautiful piece of jungle-scenery, in the centre of the pool was a Goose Teal, perfectly motionless; for, quietly as I had approached, it had heard me, and, thinking it was unobserved, did not rise, but, all the time intently watching my movements, slowly and noiselessly sank under the water till nothing but its head remained above the surface.

When on the wing, the flight of these birds is very rapid. Skimming close over the reeds, they dodge along at use of a great pace, and are far from easy to shoot.

They breed in holes in trees, laying several white eggs. I was unable to find a nest, but think they breed in the north of the Malay Peninsula, as near Kuâla Kangsa I noticed that during June they paired, and, leaving the open water, retired to out-of-the-way places in the jungle, often selecting the narrow creeks or inlets from a large jheel.

Concerning the mode in which these birds, Cotton-Teal as they are called in India, carry their young down from their nests to the water, I had the following related to me by an eye-witness, an officer in the Indian Civil Service. He was stationed on the Madras coast; but I forget the exact name of the place. Anyhow, one afternoon, late in June, while out riding he saw a Cotton-Teal leave a tree and fly down to a pool of water which was near; the bird's peculiar flight, slow and steady, so different from their usual rapid mode of progression, attracted his attention; and riding closer, he saw it had something resting on its back which, on its reaching the water, proved to be three or four young Teal.

My informant then sent his native servant up the tree from which the bird flew; and at about twenty feet from the ground he found the nest, containing several more young birds, which he brought down; and my friend took them home, hoping to rear them in his poultry-yard; but in a short time they sickened and died.

Specimens shot in Pêrak during May had their legs black, but much

tinged with yellowish-green, which is the case, I believe, only dur the breeding season. The difference between the plumages of t sexes is very marked, the female being of much duller colou than the male.

The following specimems I shot in Pêrak during April, 1877:—

Male. Length 12½ to 13 inches; irides crimson; legs and fe greenish-yellow tinged with black; webs black; face, neck a whole of the underparts pure glossy white; a deep black ring circles the neck; top of head dark brown; back and wings beau ful metallic green with a rich purple tinge; primaries barred. a the secondaries tipped with white, thus forming a band acr the wing; flanks and tail-coverts vermiculated with grey lin like a Wigeon's back; tail greenish brown; vent black.

The *female* is of the same size as the male, but not nearly boldly marked; its irides are dark brown; bill yellowish blac the secondaries only are marked with white; face and neck gr breast barred with narrow black lines; underparts dirty white; t of head dull brown, with a purple gloss.

I dissected both these birds: their stomachs were exceedin muscular, contained weed and vegetable matter, also a quant of sand and particles of quartz.

STERNA BERGII (Licht.).

I shot several of these Terns in the Straits of Johor and the south coast of Singapore. During September, while steami to Pulau Mongsa, several flocks passed close to our laun They flew close to the surface of the sea and in extended ord like a line of skirmishers; all the flocks were making in the sa direction; and it was about three in the afternoon: so perha they were on their way to some place in which to pass the night.

One shot near Johor on 13th April was from 17 to 18 inch in length, bill at front 2¼, tarsus $1\frac{3}{12}$; irides dark brown; b pale yellowish-green; legs black; upper parts mottled all ov with French grey and dusky brown; head and nape black, t feathers of the crown edged with white; forehead, underpar inner portions of the inner webs of the primaries, and tail-feath white.

I think this must have been an immature bird; others I sh

had the legs green, blotched with black.

STERNA SEENA (Sykes.).

During May, 1879, I got one of these Terns alive, it having been caught by a fisherman on the shore near Malacca. It was a female, length 16 to 17 inches, bill at front $2\frac{1}{16}$, tarsus 1, bill from gape 3; in colour bright yellow; irides dark brown; head and pointed crest over the nape deep blue-black; the cheeks, a band across the upper parts of the back, and all the underparts white, slihgtly dusky on the breast; upper parts delicate French grey, very silvery on the wings; inner portions of the inner webs of wing-quills white; tail very deeply forked.

I got other specimens near Singapore during September and October.

STERNA SUMATRANA (Raffl.). The Black-naped Tern.

Common among the islands at the south of the peninsula. A specimen shot in the Johor Strait late in September was a male, length $13\frac{1}{2}$ inches, beak at front $1\frac{1}{2}$; irides dark brown; beak and legs black; tail very long and forked, the two outer feathers projecting $1\frac{1}{2}$ inch beyond the others; top of head, also the face, silvery white; a black streak passes from the beak through the eye and enlarges into a board patch on the nape; upper parts, tail, and wings pale French grey; outer web of first primary black; underparts glossy white delicately tinged with a most beautiful rosy hue. Its stomach containe l small fishes.

SULA AUSTRALIS (?).

In June, 1877, I saw several Gannets sitting on some drifting tree-trunks a few miles out to sea off the mouth of the Pĉrak river.

ATTAGEN MINOR (Gm.). The Frigate-bird.

On 23rd September, 1880, I got an immature Frigate-bird on Pulau Nongsa, about ten miles off the south coast of Singapore; I believe it to be the only specimen recorded as having been obtained in the Straits.

With some friends I was shooting green Pigeons as they came at dusk to roost on the island. Shortly after sunset, while waiting for the Pigeons, we saw a large bird flying towards the shore, and sailing along close over the surface of the sea. As

it passed near one of our party, he brought it down. Leng about 30 inches; beak and gullet pale bluish-white; feet webbed a of a dull fleshy-white; head, neck, and throat white, mottl with umber-brown, becoming dark brown on the breast and bac belly pure white; wings and tail black, tinged with green; wi coverts brown, the feathers having whitish margins; middle cl pectinated. The bird had a very rank fishy smell.

Graculus carbo (Linn.). The Common Cormorant.

On 29th May, 1877, while returning down stream to Ku Kangsa, after a few days' shooting on the upper reaches of t Pêrak river, I shot what I believed to be a specimen of the Co mon Cormorant.

In my notes I have written:—

"Soon after daylight, as we were drifting with the stream p the village of Enggar, loud exclamations from my Malay bo men drew my attention to two large birds which were walki about side by side on the sandbank in the middle of the riv Steering within shot, I fired from beneath the attap roof cov ing the canoe and killed one of them, and, wading to the ba found I had got a fine Cormorant, the first I have seen in t part of the country. It was not quite dead when I reached it, whilst flapping about on the sand disgorged four or five sm fishes. It was a female, length 34 inches, tarsus $2\frac{1}{4}$, middle with claw $3\frac{1}{2}$; irides pale green; beak at front $2\frac{7}{8}$, in colour di white, black on the ridge; gular pouch bright yellow; head, b of neck, wings, back, and tail rich bronze slightly tinged w green, and having the feathers of the upper part of the ba also the scapulars and the wing-coverts, edged with black; lo back and sides of abdomen uniform dark greenish-bronze colo face, front of neck, breast, and middle of the abdomen wh much mottled and streaked with brownish-black.

Plotus melanogaster (Gm.). The Indian Snake-bird.

I got one of these curious birds, looking like a cross betw a Heron and a Cormorant, at Malacca; it was shot in April, of a party of ten or fifteen, on some pools at Kessang, a mar district in the neighbourhood of the settlement. The local b collectors did not seem to be familiar with it: so probably

rare in that part of the country; but further north, in Pêrak, I met with it on several occasions, though I never saw more than two or three together. Its chief characteristics are the long snake-like neck and the beautifully marked black and silver scapulars.

H. R. KELHAM,
Capt., 74th Highlanders.

GUTTA-PRODUCING TREES.

[The following interesting paper upon the trees which produce the "Gutta-percha"* of commerce has been placed at the disposal of the Society by the courtesy of Sir FREDERICK A. WELD, to whom it has been submitted by Sir HUGH LOW, Resident of Pêrak.]

Sir Hugh Low, Resident of Pêrak to the Hon'ble the Acting Colonial Secretary, Straits Settlements, dated The Residency, Thaipeng, Lârut, 12th October, 1883.

SIR,—I have the honour to forward, for the information of His Excellency the Governor, a Report on the trees producing the "*gutta percha*" of commerce, by Mr. L. WRAY, Junr., Curator of the nascent institution which, it is hoped, may develop into a useful collection of the natural products of this State as the Pêrak Museum.

2. The collections, when at the commencement of the current year His Excellency appointed Mr. WRAY, were in a very embryonic state, and being aware of the careful habits of observation he had acquired as an amateur of considerable attainments in electrical and chemical science, and of his zealous pursuit of scientific knowledge in other directions, I requested him to devote his attention to collecting information as to the valuable product known as "*gutta percha*," together with complete series of specimens of the

*[The unknown person who first rendered the Malay word *gĕtah* (sap, gum, birdlime) by the Latin word *gutta*, deserves credit for some ingenuity. The accidental resemblance of the two words, and the adoption of the latter by botanists, may however be misleading as to the true derivation of the term "*gutta percha*." *Gĕtah*, in Malay, is the generic term for any kind of sticky sap which exudes from trees, plants, leaves or fruit: *perchah* means a rag, bit or strip of any stuff. *Gĕtah perchah* would thus mean *gĕtah* in strips or pieces (after being boiled), as opposed to the semi-liquid and sticky condition of the raw substance.—ED.]

product, and the trees which produced it, such as might enable the eminent men of science at the Head of the Royal Institutions of Kew, Ceylon and Calcutta to botanically identify them.

3. Mr. WRAY has zealously and successfully carried out the instructions he received, and complete specimens of several species have been made available, and their receipt cordially acknowledged, and others are in course of preparation.

4. In addition to this, Mr. WRAY's scientific training has enabled him to discover that, by the wasteful means of collecting, which alone have been hitherto practised, by far the greater part of the valuable product for which the tree is destroyed remains in the bark which is left to rot in the jungle, so that not more than the merest fraction is made available for the demands of commerce.

5. The process necessary for extracting the whole of the gutta, Mr. WRAY describes as simple maceration of the fresh bark shred into thin slices, or of the bark dried and pounded, a process so productive of valuable results that he considers the quantity exported from the Straits Settlements might have been gathered from one-thirtieth of the number of trees which, it is estimated, must have been destroyed to produce it.

6. In Pĕrak, the larger trees had been destroyed before my attention was attracted to the manner in which it was collected. The quantity exported was rapidly diminishing, when, in 1880, I advised the Government, as the only means of preventing the annihilation of the species, the young trees of which were being rapidly cut down, to forbid the export altogether.

7. Old trees had become so scarce that we had great difficulty in securing flowering and fruiting specimens, and I have, as noticed in the diary of my late expedition to the upper waters of the Pĕrak River, ascertained that the central parts of the Peninsula cannot, in all cases, as has been supposed, be trusted to produce an inexhaustible supply. On the light sandy soils which prevail there, none of the "*gĕtah taban*" trees are seen, and the natives assured me that although the kinds of India Rubber called "*gĕtah rambong*" (*Ficus elastica*) and the "*gĕtah sĕnggârip*" (*Willoughbeia*) had been common, the *Dichopsis* or *Isonandra* and the *Payena*, which is nearly of equal value, were quite unknown. These were, how-

ever, very common on the ranges of mountains near to the Straits of Malacca and on the lands bordering the sea-coasts, where the climate is much more moist and the soil is a stiff clayey loam resting upon granite, while the lighter soils of Upper Pêrak are on slates, schists and other metamorphic rocks.

8. As the more economical mode of dealing with the product of the "gutta" trees brought to notice by Mr. WRAY—collecting the bark instead of the gum—will be of great importance to such States as still have a supply, I would recommend that Mr. WRAY's Report be published in the Straits Settlements *Government Gazette* or in the Straits Branch of the Asiatic Society's Journal, so that, what there seems no reason to doubt, is a valuable economic discovery, which it is quite likely may be equally applicable to other gums or India Rubber-bearing trees, may be made known as widely as possible. It might even, with advantage to the commerce of the Straits Settlements, be translated into Malay.

HUGH LOW,
Resident, Pêrak.

Mr. L. Wray, Jr., to Sir Hugh Low, Resident of Pêrak, dated the 25th September, 1883.

SIR,—I have the honour to inform you, that in pursuance of the request you made some months ago, I turned my attention to the study of those trees from which the Gutta Percha of commerce is procured; and I now beg to present to you my Report, embodying the result of those studies up to the present time; and solicit your special attention to that portion which relates to my discovery of the large quantity of Gutta Percha that may be extracted from the bark, which is now entirely wasted.

I have sent botanical specimens, and, in most cases, samples of gutta and wood, of nearly all the trees I have mentioned, to the Royal Gardens at Kew, and also to the Royal Botanic Gardens, Calcutta, and the Royal Botanic Gardens, Ceylon; so that when the eminent botanists at those establishments have examined and compared the several specimens, the mystery in which their botani-

cal identification has been hitherto so completely enshrouded will, I venture to hope, be satisfactorily solved.

Gĕtah Taban Merah. (Dichopsis Gutta, or *Isonandra Gutta.)*

This tree, from which the best kind of Gutta Percha is obtained, grows, or rather used to grow, throughout the jungles of the plains of Pĕrak and a short way up the sides of the hills.

It seems to like a considerable amount of moisture, and will even grow with its roots in a running stream. It is a tree of large size, attaining a diameter of 4 to 5 feet, and a height of between 100 and 200 feet.

It has large thin buttresses around its base, which often present, on their upper portions, a convex profile, and, on a large tree, attain a height of 6 to 8 feet, and a span at the base of 4 to 5 feet from the trunk. As far as I have yet seen, they never form an arch, but have their lower parts buried in the earth, from the trunk to their extremities.

When growing in the forest, the tree has a clean, straight appearance, the former being due apparently to the bark peeling off in irregular pieces. The bark is of a rich brown-red colour, and from one-third to half an inch in thickness.

Inside the epidermis it is of an Indian-red tint; and when cut, the milk white sap oozes out, at first in small beads, which, enlarging, soon join and covers the injured part with a coating of a cream-like consistency. The leaves are lanceolate on a young tree, and roundish oval with abruptly acuminative points on a tree of mature growth. The margin is entire, and they are covered on their undersurface, with minute silky warm-brown hairs. The leaf stalks and young wood are also covered in a similar manner, which gives the whole tree, when looked at from below, a brownish tint, by which the tree may generally be recognised. The upper surface of the leaf is dark green, and the veins are not prominent.

The calyx consists of six sepals, three of which are superior to the others, and alternate with them.

They are coated, like the backs of the leaves, with silky-brown hairs. The corolla is white, and is divided into six petals. The style, which is simple, is sometimes persistent, and may be seen on

the ripe fruit. There are six ovules, but one or two seeds only arrive at maturity.

On the apex of the young fruit, the six carpels of which it is formed can be distinctly traced. The fruit is coated, like the backs of the leaves, with brown down; its flesh is soft, and it is sweet, but it has a disagreeable flavour of gutta percha.

The seeds are very oily, and they are, together with some of the seeds of nearly allied species, collected by the Malays and the Sakais, who dry them in the sun for some days, and then express the oil by putting them between two flat pieces of wood, and applying pressure by clamps and wedges.

The oil, which is solid at the ordinary temperature (that is up to 90°), is highly esteemed for cooking purposes. Birds, squirrels, monkeys, &c., are very fond of the fruit and of the seeds, which adds to the difficulty of obtaining them.

It flowers in the month of March, and ripens its fruit in June; but the Malays assert that it only fruits once in three or four years.

The gutta of this variety is red, and the colour is not due to an admixture of bark, as is frequently stated. It is probable that other varieties of gutta may be sometimes mixed with bark to make them look like *Taban Merah*, and so command a higher price than they otherwise would; but the true *Gĕtah Taban Merah* is red *per se*, and the water in which it is cleaned, although changed many times, still becomes deeply dyed with that colour. Specimens of this, in fruit, together with wood, bark, and gutta, I sent to the Royal Gardens at Kew, Calcutta, and Ceylon, on May 30th, 1883.

Method of collecting the Gĕtah Taban Merah.

A tree having been found, a staging of saplings, tied together with roots or rattans, is erected round it, so that it can be cut above the spreading buttresses. The tree is then felled with a little Malay axe called a "*bĕliong*," and as it lies on the ground, V shaped rings, about one inch broad, are cut in the bark, at intervals of 15 to 18 inches, all along the whole length of the trunk, and of the large branches, with a heavy chopping knife, called a "*parang*." These cuts soon become filled with the white cream-like sap, and

in about half an hour, the gutta will have separated from the aqueous portion of the sap, and may then be removed, by rolling a small ball of it round in the cuts, to the edge of which the coagulated gum adheres, and forms a disc, varying in size, according to the number of scores it is rolled in.

These discs are then boiled in water, and made into balls, and sold by the collectors to the men who export it to Penang or Singapore.

The gutta is, at first, pure white, but soon changes to pink, and finally to a brownish-red. The water in which the gum is boiled becomes a dark red-brown, and this colouration is the most distinctive feature that this variety of gutta possesses, and by which it may be easily recognised.

The air seems to have on the sap an effect analogous to that of rennet on milk, coagulating the gummy portions so rapidly, that only a small quantity of their watery stuff runs out of the cuts, all the gutta percha remaining as a soft spongy mass in the scores.

The amount of gutta obtained from a single tree, appears to have been greatly over-estimated in the accounts that have been written on the subject; and exceptionally large yields from gigantic trees have been erroneously quoted as being an *average* product, which is clearly by no means the case.

I had a tree felled, that was two feet in diameter (at six feet from the ground) and about one hundred feet high, the age of which I estimated, from its annular rings, to be over one hundred years. It gave only 2lb 5 oz. of fairly clean gutta, valued by a Malay dealer at $1.20 per catty, or 3*s*. 3*d*. per pound, so that the product of this tree was worth only 7*s*. 6*d*.

Some say, that if gutta trees are felled in the height of the rains and when the sap is rising strongly, they then yield more gutta than at other times; but I have had no means of testing the truth of this assertion.

*Gĕtah Taban Sutra.** *Dichopsis* ——.

This tree is usually confused by the Malays with the preceding one, but is very different to it in many respects. It grows on low

* Sutra=silk.

hills, and, the Malays say, will only thrive in sight of water; and those I have seen certainly bear out this idea, for they were all near the bank of some stream, and at an elevation of about 500 to 600 feet above sea level.

It has much the same appearance as the *D. Gutta*, but the leaves are smaller, and their backs have a yellower shade of brown, and the buttresses are much smaller, and have a concave outline. The bark, which is dark brown, is smooth, and shews, by small oval indentations, the places where the branches have been, when the tree was young. This is a feature I have not noticed in any other gutta, and may, I think, be taken as characteristic.

The flowers have a reddish tinge, and the fruit is coated like the backs of the leaves, and is oval in form. and about the size of a mussel plum.

Its gutta is pale reddish-brown (like *Gĕtah Sundik*) and the water in which it is boiled does not acquire a red colour. It coagulates nearly as quickly as *Taban Merah*, and is collected in the same way.

The specimens I collected were obtained from the Ulu Kenering, Pĕrak. The tree was 12 inches in diameter at 3 feet from the ground and was in fruit when felled on the 17th August, 1883. The flower was obtained by a Malay about 10 weeks previously.

Gĕtah Taban Puteh (*White*). *Dichopsis Polyantha?*

This tree cannot be told, by its outward appearance, from *Dichopsis Gutta*, except that its leaves are rather larger.

It has large buttresses, with convex tops, and the bark is nearly of the same shade, but rather browner. The fruit also seems to be similar, and the flowers are white; so that it is not until the tree is felled, that any very distinctive character appears. It is then found that the sap, which is much more copious, does not coagulate quickly, and when it does, it is of a dirty white colour, and has a much higher softening point than any of the other kinds, even boiling water not being sufficiently hot to thoroughly soften it. This tree grows on the hills, up to an elevation of 2,500 feet above sea level.

I have never seen it growing on the plains, nor in fact lo than 1,800 feet.

It ripens its fruit in the month of February.

The gutta is collected by felling the tree, ringing the bark, placing leaves, bamboos, &c., under it to catch the sap; whic afterwards boiled, and the natives often add salt to hasten coagulation.

It is frequently adulterated with the gutta from Kayu Jelut and two or three of the Bassias.

The usual method of mixing them is to do so before the sap coagulated, as afterwards, owing to the high melting point of *ban Putch*, they cannot be so easily and intimately combined. tree of ten inches in diameter, at four to five feet from the gro gave 2lb 11oz. of fairly clean Gutta Percha.

Gĕtah Taban Putch (Variety).

This variety differs from the above, in having smaller leaves, in the shape of the fruit, which is longer in proportion to its brea

I have found it growing on the hills at 2,300 feet elevation ; it ripens its fruit in the month of February.

Gĕtah Taban Chayer. Dichopsis* ——.

This tree I have found growing at 600 feet above sea level ; it attains a large size.

The bark is reddish-brown, and the wood is hard and white, w a dark red centre.

The backs of the leaves are, when young, of a golden brown, full grown ones are silvery.

They have not the points of the leaves that are present in n other varieties of Dichopsis.

The flower, which appears about the middle of September, is p green, and very small.

The corolla has a six-toothed limb, the teeth being nearly tri gular in shape, and so thin as to be almost transparent.

* Chayer=liquid.

The diameter of the flower is about $\frac{3}{16}$ of an inch.

In the throat of the corolla are inserted, by short filaments, twelve anthers. They are placed alternately in the centre of the teeth, and at the junction between two teeth.

The style is simple, and of such a length that it projects beyond the petals, in an unopened flower bud. It appears to be often persistent.

The gutta coagulates very slowly, hence the native name "*Chayer*," which means watery, &c.

The gutta, which seems to be of good quality, is of a dirty white colour, but may be easily distinguished from *Taban Puteh* by its lower softening point, and the tree, by its having small concave buttresses.

Gĕtah Taban Simpor. Dichopsis Maingayi?

This tree may be readily distinguished from the foregoing by its large dark green leaves, and by its prominent veins at the back, which are covered by coarse, silky light-brown hairs, the back of the leaf itself being only sparingly covered by them.

The bark is about half an inch thick, rough, and of a reddish-brown colour, much covered by a greyish lichen. It has medium-sized buttresses with a concave outline.

One tree that I measured was three feet three inches in diameter, at six feet from the ground, and from that height the buttresses sloped out until they reached the ground; having a spread of about three feet from the trunk.

The flower is white, and comes out in the beginning of April, or the end of March; but its fruit I have not yet seen.

I had one tree felled, which, at three feet from the ground, measured seventeen inches in diameter, and sixty-three to the first branch. The weight of gutta obtained was 12oz. The sap, by the aid of heat and stirring, coagulated in twenty-three hours after tapping.

This gutta is sold under the name of *Gĕtah Puteh*. The tree grows on hills up to about the same height as *Taban Puteh*.

Gĕtah ——. *Dichopsis* ——.

This is very much like the foregoing, but the leaves ar lighter green, and are not so much coated with hairs; th is smooth.

I have not yet seen the flowers, but the fruit is green, s devoid of hairs, and ripens in August. I found it growin the *Taban Sutra*.

Its gutta is slow in coagulating and softens at a lower te ture than the last named variety; and it becomes rather when heated, and remains so for some time after it has coole

Gĕtah ——. *Dichopsis* ——.

This tree has large, glossy, dark-green leaves, the backs of are coated with rich warm chocolate-brown hairs, more dens the veins than elsewhere, and the midrib is coated, in a similar ner, on the top surface of the leaf, for about two-thirds length.

The bark is very rugged and greyish-brown in colour, conta so little gutta that it is not worth collecting. I have fou growing on hills, about 800 feet high; but, as yet have not able to procure flowers, or fruit.

Gĕtah Taban ——. *Dichopsis* ——.

Trees of this variety are said to be growing on the Gû Miru range, near Kuâla Kangsa, to have small leaves, an yield gutta of good quality; but I have not yet fallen in wi nor have I had an opportunity as yet of collecting any speci of it.

Gĕtah Sundik. Payena Leerii.

This variety grows in swampy places near the coast, and I f one tree with its roots in a small creek, the water of which quite salt, and only a short distance from the regular Mang

trees fringing the stream. The leaves are small, shiny, and have a reddish tint when young. The bark is about three-eighths of an inch thick, and dark brown in colour, moderately rough.

The flowers are white, and the fruit is sweet, and eaten by the Malays. Its gutta is like Taban Sutra in appearance, and is collected by scoring the bark, catching the sap, and boiling it, until it coagulates. A tree measuring two feet and eight inches in circumference, at three feet from the ground, and 38½ feet to the first branch, that I had felled, gave 6½ oz. of gutta.

Gĕtah Sundik. Payena ——.

This is a tree much resembling *Payena Leerii*, but differing from it in the leaves being longer in proportion to their breadth, the fruit and seed smaller, and the bark, which is reddish-brown, is only about one-half the thickness, and consequently the yield of gutta is much less (the yield seeming to be in proportion to the thickness of the bark). This variety, therefore, is less valuable commercially than the thick-barked kinds. I may observe that it grows in swamps, like the *Leerii*.

Gĕtah Gahru? Bassia ——.

This is one of the Bassias, nearly allied to *B. Motleyana;* and it grows on the hills up to an elevation of 2,600 feet. The bark is light grey, and the wood seems to be of good quality.

The leaves are dark green, and the flowers white.

The fruit is reddish-brown, and covered with silky hairs, like that of *Dichopsis Gutta.*

The style is often persistent. Its gutta is white and hard, and is used only for mixing with better classes of gutta.

There are several other Bassias which yield gums that are used for mixing also; but I have not as yet obtained any botanical specimens of them.

Kayu Jelutong. Dyera ——.

The gum from this tree, is known as *Gĕtah Jelutong*, and is employed in the same way as that from the various kinds of Bassia.

The word "*Kayu*," means *wood*, but it is at times used by Ma lays instead of "*Pokok*" a tree, where they consider that it sound better.

This tree is one of the loftiest to be found in the jungle; and ha blackish-grey bark (white inside) which yields great quantities o white sap when cut into. It bears large bean-like pods, in pairs.

Its leaves are green above, and bluish-white beneath, an arranged in whorls at intervals, with seven leaves in each. Th wood is white and very soft, and is largely used by the Chinese fo making coffins, for which purpose it it well adapted, as it is ligh and decays very rapidly when exposed to moisture.

On the great loss of Gutta, resulting from the wasteful mode of extraction employed by the Malays.

Whilst engaged in collecting specimens and information respect ing the gutta-producing trees of Pêrak, I was greatly struck by th exceedingly small amount yielded by even large trees, by the pre sent Malay method of ringing the bark; which led me to an exami nation of the dried bark, with a view to ascertain, by a series o careful experiments, what proportion of the whole amount of gutt contained in a tree was actually left in the bark after the usua process of extracting it had been performed.

With this object, I had, on the 24th of May, 1883, a tree o *Gĕtah Taban Simpor* felled, and scores cut in the bark, at distances of fifteen inches along the whole length of the trunk; and obtained 12oz. of gutta. Some two or three days after, I had some of th bark removed, and on the 29th, I cut some of it up into thin slices across the grain, and boiled them in water for a short time when I found that gutta had been expelled, and remained as a slight and irregular coating on the chips. This I picked off, and weighing it I found the yield to be 3½ per cent. of the weight of the wet bark operated on.

Encouraged by this simple and satisfactory experiment, I nex had a weighed sample of bark pounded in a mortar, and then trans ferred it to a glass vessel, and boiled it in water.

In a few minutes, the gutta formed itself into small detached

white flakes, and by stirring, collected into a mass, which was easily removed from the flask, and purified by reboiling in clean water. By this method, the sample of *wet* bark yielded 5.3 per cent. of clean white gutta.

Another weighed sample of bark, was cut up and dried in the sun, and then put into chloroform, and after standing some hours, with frequent shakings, the liquid was poured off, and allowed to evaporate; fresh chloroform being added to the bark to extract any gutta which remained in it. The total product thus obtained was 5.7 per cent. of the weight of *wet* bark used in the experiment.

I next took a weighed sample of wet bark and cut it up into small chips, and dried it thoroughly, and found as the result of several experiments, that it lost 50 per cent. of its weight in the process.

The following deductions may be made from these results:—*Firstly*, that the wet bark, which is now allowed to rot in the jungle, contains fully 5.7 per cent. of its weight of Gutta Percha, or when dried 11.4 per cent.; and *secondly*, that by simply pounding or rasping, and boiling the bark, nearly all the gutta which it contains may be extracted.

After the tree was felled, I made careful measurements of it, and weighed portions of the bark, so that I could calculate the total weight on the trunk of the tree, up to the first branch, which I found to be 530lbs. when in the wet state.

Now if we take 5.3 per cent of this, as being the amount of gutta, that may be extracted by the process of pounding and boiling, already specified, we find that it would yield 28lb. over and above the 12oz. which were obtained by the ordinary Malay method; or, to put it in another way, that for every pound of gutta collected at present, 37lb. are wasted!

In the Kew Report for 1881, I find it stated, that in the year 1875, the export of gutta from the Straits Settlements and Peninsula, was estimated at ten millions of pounds weight.

I have no means of ascertaining the accuracy of that estimate, but accepting it as being tolerably correct, we must, from my experiments, come to the conclusion, that even if we take the amount of gutta wasted, at only thirty times the weight of that collected,

there were, during *that one year*, no less than three hundred millions of pounds, or putting the price at only 2*s.* 6*d.* per pound, £37,500,000 sterling worth of Gutta Percha thrown away, and utterly lost!

To fully realize the importance of this subject it must be borne in mind, that this vast destruction of these valuable trees (which are of such very slow growth) and of this *material*, on which the communication of the world may be said in a measure to depend, is going on *every* year, without any cessation whatever.

It will be noticed, that I have left out of my calculations, all the bark on the upper part of the trunk, and on the branches, which however is just as rich in gutta, as the lower portion of the trunk: even the leaves contain a notable proportion. I have tested, also, other varieties of these trees, and have obtained almost identical results, therefore I need not enter into further details.

The question naturally arises, can the bark be broken from the trees, and dealt with in the country, or can it be dried and sent to Europe, to be ground up and treated in the manner I have described, or in some other way sufficiently economical, as to be commercially successful? This question deserves the most anxious attention, especially of those who are engaged in the working up of this material; for if it can be successfully accomplished, then the same supply could be furnished, with *one-thirtieth* of the present annual destruction of trees!

With the object of having this point so far tested, I have collected some bark, and am sending it to the Royal Gardens at Kew, with a request to have it sent to one of the large manufacturers, so that a report may be obtained from them on the subject.

The labour involved in stripping the trees, carrying out the wet bark from the jungles (where no roads, or even paths, exist), drying it, carrying it to a port, and thence to England, are items of expense, which must not be overlooked. At the same time, it must also be remembered, that some other jungle products, quite as bulky, and not so valuable, are yet exported with profit.

If the gutta contained in the bark can be profitably extracted, the planting of those trees on waste lands, might possibly be undertaken by Government, with every prospect of success.

The variety that seems to be most easily grown, is *Payena Leerii* (Gĕtah Sundik).

This tree fruits freely, and will thrive on the swampy plains near the coast; and is said by the Malays to grow fast. Its wood is hard, with a close grain, and takes a good polish, therefore may be of some value as timber.

I have tried experiments in making cuttings of some of the Dichopsis, but have not had any success as yet; although it is probable that they may be propagated by this means, when the proper mode of effecting it is found out.

I have not tried *Payena Leerii* as yet, but hope to be able to do so very shortly.

L. WRAY, JUNR.

SHAMANISM IN PERAK.

SOME acquaintance with the black art is essential t
Malay medical practitioner. Simple remedies for
and bruises are generally well understood, and
the more common diseases—such as fever, small-po
are often successfully, if not skilfully, treated with
remedies. Bone-setting, too, is a branch of the healing sci
which Malays sometimes shew much expertness. But,
cause of a disease is not apparent, or if such alarming sy
as insensibility or delirium set in, it is usually presumed th
spirits are at the bottom of the mischief, and sorcer
medicine, has to be resorted to. Arabic works on medicin
been translated into Malay, and there may be read learned
sitions on the parts and functions of the human body, wh
point of scientific accuracy, are of the age of GALEN and ARIS
Demoniacal possession, though it has always been a popular
among the Arabs (in common with other Semitic nation
explaining various forms of disease, is not an idea whic
Malays have imported from the West. Their beliefs reg
the distribution, powers and manner of propitiation of th
spirits, to whom they often ascribe human disease and suff
are relics of the days when spirit-worship was the religion of
primitive ancestors. The early rites of the aboriginal inhab
of Sumatra and the Peninsula must have been modified at
period by Hindu settlers from India, for traces of Brahm
worship are traceable in the rude chants and invocations su
Malay *pawangs*, to this day, by Muhammadan sick-beds. W
Muhammadanism is strongest, namely in the sea-ports and Eur
settlements (whence a constant communication with Mecca is
up), Malay ideas on the influence of devils on disease pa
more of the Semitic type. The evil spirits are *sheitan* or *jin*
pious Arabic sentences are used as charms and invocations.
in remoter districts, downright heathenism may be met with.

demons to the terrified villagers of many an inland *kampong* have a distinct personality. They must be met by the employment of other demons to counteract their influence, or they must be propitiated by bloody sacrifices.

In the State of Perak, it is usual to ascribe nearly every disease to supernatural agency. Medicine is often dispensed with altogether, and all hope of recovery is made to rest on the result of the incantations of professional *pawangs*. According to the belief of the people (professed Mohamedans for generations and generations!) the mountains and rivers of their country, the ground on which they tread, the air which they breathe, and the forests in which they seek for rattans, gutta, gums and other produce, abound with spirits of various kinds and of varying powers and dispositions. The malicious *bajang* is the most dreaded, for he is a goblin of inveterate hostility to mankind. Scarcely less formidable is the *langsuyar*, a kind of "white lady" or "Banshee," who may be heard sometimes amid the darkness of a tropical night moaning among the branches of the trees or soothing the child which she carries in her unsubstantial arms. The hunter spirit (*hantu pemburu*), who with his wife and child sometimes rushes past the peasant's huts at night in a whirlwind, pursuing with his four ghostly dogs an unseen quarry, is a potent source of evil, and there are many others too numerous to mention.

When the malice of some one of these many demons has caused sickness in a Malay family in Perak, help is summoned in the shape of a *pawang*, or medicine-man, who has a catalogue of spells at his command and is known for his familiarity with evil-spirits. The diagnosis may be effected in two ways. Either the *pawang* becomes entranced and sees *(tilik)* in his disembodied form secrets concealed from ordinary mortals and is able on recovering sensibility to declare the nature and cause of the disease, or else he calls down *(menurunkan)* some familiar demon (whom he has probably inherited from his *guru* or preceptor), and, becoming possessed by him, speaks, at his prompting, words of wisdom or folly as the case may be.

Some years ago I was a witness at a *kampong*, or village, in Perak

The patient was a young married wo
child .. [illegible] years, whose first baby was co
symptoms, which declared to the Malays
evil-spirits, were probably paroxysms of p
and left the patient so weak that when I s
an insensible state.

The scene was the centre portion of a la
lighted with two or three oil lamps on the
on a bed in a recess formed by curtaining o
the fourth being open. Opposite to the
side as she lay on her back, sat the *pawan*
a big muscular Malay, grasping a lar
each hand. Between him and the bed
mentioned. On the other two sides of a
lamps were the centre, were ranged the peo
bours, visitors and strangers according to
I occupied the place of honour, being neare
curtained recess and having it on my righ
present, myself included, sat cross-legged on
couch were eight or ten women watching e
sufferer and prepared to restrain her if she
delirium. The whole building was crowde
being discernible wherever the flickering li
pened to shed a transient gleam. Polite salu
and a few expressions of condolence and sy
the relations. The latter described the ma

tiger-spirits, to which class of demons CHE JOHAN'S familiar belongs. The air was not unpleasing, the words were difficult to catch, but the lines flowed in an easy rhythm and the metre was very regular. A performer of this kind is essential to every *pawang*, and, as in the present instance, is very often his own wife. She is commonly called *bidu*, or (in cases of royal *séances*) *biduan*.* In the invocation of the tiger-spirits, however, a peculiar nomenclature is adopted for everything, the *bidu* becomes *pengindin*, and the drum which she beats (which has only one end of the cylinder covered) is called *katubong*.

The *pawang*, naked from the waist upwards, had bound about him a couple of cords which crossed the back and breast, being brought over one shoulder and under the other arm respectively. He also wore strings round his wrists.

These cords are supposed to protect the *pawang*, or medium, from the malevolence of the evil spirits by whom he may be possessed. The same idea is found in Ceylon. According to the *Mahawangso*, Vishnu in order to protect Wijayo and his followers from the sorceries of the Yakhos, met them on their landing in Ceylon and *tied threads on their arms*.† Among the people of Laos, too, the same virtue is ascribed to ligatures of thread over which a charm has been pronounced. "Le grand remède universel, c'est de l'eau "lustrale qu'on fait boire au malade, après lui avoir attaché des fils "de coton bénits aux bras et aux jambes pour empêcher l'influence "des genies malfaisants."‡

As the *pengindin* screamed out her chant, the *pawang* seemed to become subject to some unseen influence and to lose control over himself. Sitting rigid at first, holding in each hand a huge bunch of leaves (*daun changlun*), he presently began to nod like a man overpowered with sleep, then he sniffed at the leaves, waved them over his head, and struck one bunch against the other. Finally, he fell forward burying his face in the leaves and sniffing in imita-

* Sansk. *vidhavá*, a widow; Lat. *vidua*.
† Tennent's "Ceylon," I, 340, n.
‡ Pallegoix—"Description de Siam," I, 43.

sible objects on the mat. Presently he
chest and shoulders with the bunches
wards the music stopped. We had now
but simply his body possessed for the
demon—*bujang gĕlap* or *the dark dragon*
the *séance* lasted, he spoke in a feigned
words with the peculiar intonation of
introducing frequently Sakai words and
most of the Malays present. Every
addressed him as "Bujang Gĕlap." The
the first to do so. Pointing to the insensi
on the couch beside him, he explained
attacked by some power of evil, and asked
forth his supernatural power to expel th
ing her. The latter asked a few questi
a difficult one, and then commenced some

Returning to his mat, which he had ten
at the patient and to converse with the fan
ful of *bertih* (rice parched in the husk)
cast around him. Then, after much grow
rose to his feet and performed a singular d
ment of the shrill chant and monotonous to
Presently he danced forward past the lan
of the insensible girl, and then himself cha
commencing "*Hei*————*i*————*i*——
spirit) the first word being enormously len

roared and growled and sniffed about uneasily until it was evident from his movements that he wanted to get under the mat. An accommodating person sitting close by lifted up the mat for him and he crawled under it on all fours and lay down entirely concealed from view. The chorus and the drum went on, and I hardly knew which to admire most—the physical endurance of the woman who sang so persistently at the top of her voice without any symptom of fatigue, or her marvellous memory. The invocations were very long, but she never seemed to hesitate for a word. There must, however, have been a good deal of repetition, I imagine.

After a retirement which had lasted for about a quarter of an hour, during which he had kept perfectly still and motionless, the *pawang* shewed symptoms of returning vitality. The mat was removed, and he resumed his seat upon it, yawned, uttered a few ejaculations in his feigned voice, and then sat up to be questioned. A desultory conversation then ensued, the *pengindin* acting as interpreter when the Sakai dialect used by "Bujang Gĕlap" was unintelligible to the audience. The result was declared to be that the tiger-spirit had identified the demon which was causing the suffering of the sick person present. A thrill of horror went round the assemblage when this was announced to be a dumb *langsuyar* (banshee). The correctness of this finding was then discussed and it seemed to command popular favour, for it was universally remarked that the patient had been insensible for two whole days, during the latter part of which time she had been quite silent. This was now, of course, accounted for by the dumbness of the evil spirit which possessed her.

The women round the sick-bed now said that the patient was trying to move, and all turned to look at this manifestation of demoniacal power. It was only a momentary access of delirium marked by convulsive movements of one arm, rolling of the eyes and movement of the lips and jaws. No sound escaped from the sufferer, another proof of the correctness of the *pawang's* diagnosis, and presently she was still again, after many fervent ejaculations of *Astaghfir Allah* (I beg forgiveness of God) from those present.

"Bujang Gĕlap" continued his efforts for the cure of the patient

for a long time. Again and again he strewed the place wi
and sprinkled the patient with *tepong tawar*. Once he
eight grains of *bertih* which were put into her mouth. He
long invocations, danced wild dances, and beat himself
bunches of leaves. But all in vain, the dumb *langsuyar*
possession of the sufferer. In the intervals of the ceremo
pawang conversed occasionally with members of the family
retaining his assumed voice and using Sakai phrases.
condescended to accept a Malay cigarette (*roko*), which h
by the Sakai word *nyut*.

At length he pleaded fatigue, and gave place to an old m
dealt with a different class of demons altogether. The spirit
he professed to be able to influence are the *hantu sungkei*
demons of the Sungkei river, a particular district in Perak.

His method of procedure differed a good deal from that
pawang of the *hantu blian*. Instead of the old woman with
drum, he had a male *bidu* with a large round tambourine. A
bunch of *pinang* leaves replaced in his hands the two large b
of *daun changlun* which "Bujang Gĕlap" had carried. A
preliminary sprinkling of *bertih* by the new *pawang*, the *bid*
menced to chant an invocation to the Sungkei spirits, add
them in turn by name. The symptoms of possession on th
of the *pawang* were convulsive shaking and shivering, especi
the hand and arm which bore the bunch of *pinang* leaves.
tune and metre were quite different from those employed
dressing the *hantu blian*. The old Sungkei *pawang* proved
ure, for after endless chanting and after he had been po
successively by "Panglima Raja," "Anak Janggi," "Hulu
Raja" and "Mambang Dundang," all powerful Sungkei spi
was unable to declare anything, and left us as wise as w
before.

What a common incident in Eastern tales is the dire ill
some lovely princess, for effecting whose recovery an agonised
offers half of his kingdom and the hand of the lady in marriage
is always some favoured hero who applies some magical reme
restores the princess to health after the medical profession h

completely baffled. But think of what the patient has had to undergo at the hands of the unsuccessful competitors, before the right man takes the case in hand! Think of all the doses administered by rival doctors, or prepared by sympathetic friends, each one assured that he is going to cure the disease and win the King's favour! I have been reminded of these things sometimes when I have seen or heard something of the treatment adopted in Malay families in cases of dangerous illness. In the household of a Perak Raja, *carte blanche* would be given to any one representing himself to have a remedy, on the occasion of a desperate sickness such as that which called for the scenes which I have imperfectly described. Any medicine offered would be gratefully received and administered, and very likely, before it could possibly take effect, some one else's prescription would be poured down the patient's throat on the top of it. It is thought to be a mark of sympathy and solicitude to suggest and prepare remedies, and they are usually accepted and tried in turn, to the imminent danger, I should imagine, of the unfortunate person experimented on. When a child is born in a royal house in Perak, all the old ladies in the country concoct and send to the scene of the interesting event doses called *salusuh*, which the mother has to swallow with great impartiality. It will be seen from this what an important part unprofessional zeal may play in sick chambers among the Malays. On the occasion I speak of, numbers of friends and relations brought their own specifics, but the state of the patient prevented their use.* I must, however, describe the dedication of a *balei berpusing*, or "revolving hall," which was arranged and carried out at the instance of one of the relations.

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* It is right that I should explain that every effort had been made to persuade the family to adopt civilised remedies, and to give up the proposed resort to the *pawangs*. There was no English Doctor in Perak then, but the officers at the Residency had a medicine-chest and one or two simple medical works. The head of the family, however, declared that, if the *pawangs* were not employed and the girl died, her other relations would charge him with not having done all in his power to save her. English medicines would be thankfully received, but they would be administered in their turn with native remedies. The sex of the patient rendered interference in nursing and feeding her impossible. A large proportion of persons who die up-country in Perak are ushered out of the world by the drum and chant of the *pawang* and *bidu*.

It was after the Sungkei demons had been invoked in v
propitiatory offerings in a *balei berpusing* were resorted to.
The two *pawangs* already present were asked to give th
their mats were spread afresh, their lamps re-trimmed, a
bowls of parched rice replenished by officious attendants. F
ly, a couple of men brought in a neat model of a Perak
The house of prayer in an inland Malay village is a very
affair. It is usually a square building with a door or win
each of the four sides. The main roof of the edifice, ins
terminating in a point, is surmounted by a little square cro
with a peaked roof. This was exactly reproduced in whit
very neatly and artistically finished. At the bottom of the
ture building was a single bamboo support, the end of whic
hollow fitted like a socket upon an upright rod fixed on th
The one leg of the model being thus fitted on to a sta
upright, the little house could be turned round and round
presenting each door in turn to each point of the compas
soon as it was fixed, a kind of frill or border, made of young
nut leaves with a deep fringe of the same material, was tied
the base of the model so that the ends hung down, entirel
cealing the bamboo leg and the simple mechanism by w
worked upon its pivot. This fringe is called *jari lipan* ore
pede's legs" from some fancied resemblance to the libera
bers of members with which Nature has gifted that insect. Wh
had been tied round the miniature mosque and the ends of the
had been docked with a pair of scissors by a female slave, s
admit of the model revolving freely, it was time to fill the i
with the propitiatory sacrifices. This was the task of the
relations and of the representatives of the old lady, in acco
with whose vow the *balei berpusing* was being dedicated.

The offerings to demons when made in this manner are
kinds—*lemak*, *manis*, *masam*, *pedas* (the fat, the sweet, the
the pungent). The "fat" consisted of a fowl sacrificed
and there before us. The blood was caught in a leaf and
in the centre of the miniature building, or *balei*, as I shall no
it. The feathers were plucked out, the entails removed, a

body divided into joints. Every part of the bird was then placed reverently inside the *balei*, including the feathers and entrails. The wings were tied to the streamers of the fringe outside, as were innumerable sweet offerings—*wajil*, *dodul*, *tebu*, *pisang* (confectionery, pastry, sugar-cane and plantains). I did not ascertain what the sour and the pungent consisted of, but they were no doubt contained in small saucers and other receptacles which I saw being poked through the little doors of the toy house.

When all was ready, the drumming, the invocations and the performances of the *pawangs* began again. Each in turn, after having repeated much of what I have already described, advanced to the couch of the patient and waved the evil spirits away from it into the little *balei*, which was placed close by. The demons were coaxed, entreated and threatened by turns. Each *pawang*, armed with a bunch of leaves dipped into a bowl of *tepong tawar*, guided an indefinite number of the evil ones into the place where the feast had been spread for them. The incantations and waving went on for a long time, and it wanted only an hour or two of dawn when it was concluded that the last of the demons had entered the receptacle. The *balei* was then lifted up and carried off down to the river (on the bank of which the house stood) escorted by the *pawangs*, who with more charms and incantations drove the spirits in front of them to the water side. Then the *balei berpusing*, with its array of delicacies and its freight of wickedness, was set afloat on the river and soon disappeared down the stream in the darkness. The last ceremony was the repetition of a formula as the party returned to the house from the river. One of the men belonging to the family called out to the women in the house "*Semboh betah?*" "Is there any improvement?" And a shrill female voice shouted back the prescribed reply "*Ber-lari ber-jalan*" "Running and walking," in allusion either to the state of the patient, implying that she was up and about again, or else to the hasty retreat of the evil-spirits, I am not quite sure which.

No improvement, however, took place, and though the efforts of the *pawangs* were redoubled on the following night, and the

services of other and more famous medicine-men were ret
the poor little patient never recovered consciousness and
within four and twenty hours after the *balei berpusing*,
ought to have contained all the powers of evil lately affli
her, had been cast adrift on the Perak river.

W. E. MAXWEI

NOTES
ILLUSTRATING THE CHANGES
WHICH
CONSONANTS UNDERGO IN PASSING
FROM ONE
MALAYAN DIALECT TO ANOTHER.

As one of the principal objects of the Straits Branch of the Royal Asiatic Society is to trace the origin of the various dialects of the Malayan Peninsula and Archipelago, I have thought that the following notes, though hastily put together, and with very little material to work upon, may prove interesting and give a clue to those who are more capable of following the tangled thread of Malayan etymology to its source than I am.

I have taken the Malay language as the starting point whenever possible: where three or four examples of a change are given, it must be understood that thirty or forty could as easily have been supplied: but a change exemplified by only one word must be considered doubtful until corroborated, as I hope each one will be, by further contributions from some of the large number of polyglotts whom the Straits Branch of the Royal Asiatic Society counts among its members.*

A. M. FERGUSON, Jnr.

* [See CRAWFURD's paper on the Malayan and Polynesian Languages and Races. Journ. Ind. Arch., II., 183.

ED.]

B changes into

G	*b*awa—carried.	*g*awa—Java.
	*b*ara—live coals.	*g*ara—Battak.
	*b*elatik—sparrow.	*g*alatik—Java.
H	*b*isik—whisper.	*h*osik—Battak.
	*b*usu—bow—Amblaw.	*h*usu—Saparna.
	*b*ulu—feather.	*h*ulue—Awaiya.
	*b*ueti—box—Lariki.	*h*ueti—Teluti.
L	*b*intang—star.	*l*intang—Java.
	ri*b*u—thousand.	ri*l*au—Champa.
M	*b*uni—wise.	*m*uni—Battak.
	*b*idan—black—Sasak.	*m*itang—Solor.
	*b*laha—rat—Bouton.	*m*alaha—Awaiya.
	*b*anyu—water—Java.	*m*anu—Bouton.
	*b*oti—rat—Cajeli.	*m*uti—Tidore.
R	*b*awa—under.	*r*awa—Macassar.
	*b*anyu—water—Java.	*r*ano—Tomohon.
	*b*iru—blue.	*r*uru—Tidore.
T	*b*ungkus—packet.	*t*ongkos—Tagala.
	*b*ulaley—elephant's trunk.	*t*ulale—Sunda. *t*elale—Java.
	*b*uah—fruit.	*t*uah—Dusun.
N	*b*ahas—rice—Sibuyan.	*n*ahas—Lara.
	la*b*oh—rat—Kiyan Dyak.	la*n*au—Melano Dyak.
W	*b*atu—stone.	*w*atu—Java.
	*b*atuk—cough.	*w*atuk—Java.
	*b*atang—trunk.	*w*atang—Bugis.
	ba*b*i—pig.	ba*w*i—Macassar.
D	*b*osan—loathsome.	*d*usan—Madura.
	*b*anyu—water—Java.	*d*anum—Punan Dyak.

D changes into

R	i*d*ong—nose.	i*r*ong—Java.
	*d*ara—blood.	*r*ara—Salayer.
	ma*d*u—polygamy.	ma*r*u—Java.
L	li*d*ah—tongue.	li*l*ah—Tomohon.
	*d*ara—blood.	*l*ara—Matabello.

D changes into

L	*d*uhy—bone—Menado.	*l*uin—Ahtiago.
	*d*owa—day—Wayapo.	*l*au—Baju.
	*d*aun—leaf.	*l*aun—Saparna.
	*d*ari—knife—Tidore.	*l*ari—Salibabo.
G	*d*umahi—come—Sanguir.	*g*umahi—Massaratty.
	*d*awika—day—Sula Islands.	*g*awak—Cajeli.
	*d*ayung—oar.	*g*ayung—Tagala.

H changes into

L	bo*h*ong—lie.	bo*l*aan—Tagala.
	*h*abu—ashes.	*l*avu—Amblaw.

G changes into

L	ti*g*a—three	ti*l*an—Melano Dyak.
	i*g*ung—nose—Battak.	i*l*ong—Sulu.

L changes into

D	*l*abuh—fallen.	*d*abu—Battak.
	*l*iar—savage.	*d*ia—Malagasi.
	*l*ima—five.	*d*imi—Malagasi.
	*l*inta—leech.	*d*inta—Malagasi.
	pi*l*i—choose.	fi*d*i—Malagasi.
N	*l*iyat—soft.	*n*iyat—Battak.
	*l*ima—arm—Samoa.	*n*ima—Tongan.
	ma*l*ur—jasmine.	me*n*ur—Java.
	la*l*at—fly.	la*n*ok—Battak.
	apu*l*a—dog—Gorontalo.	kapu*n*a—Sanguir.
P	*l*angir—sort of bark.	*p*angir—Battak.
	*l*empeng—roll of tobacco.	*p*empeng—Macassar.
B	*l*aut—sea.	*b*awut—Land Dyak.
R	*l*angit—sky.	*r*angi—New Zealand.
	*l*ayar—sail.	*r*ayar—Battak.
	*l*apar—hunger.	*r*apar—Battak.
	ui*l*a—lightning—Samoa.	ui*r*a—New Zealand.
W	bu*l*an—moon.	bo*w*an—Tagala.
	bu*l*ir—ear of corn. bo*l*ig—Bisaya.	bo*w*ig—Tagala.

L changes into

T	*l*abu—gourd	*t*abu-*t*abu—Battak. *t*awu—gasi.
J	*l*angkap—ready.	*j*angkep—Sunda.
Gh	u*l*u—head. o*l*o—Tagala.	o*gh*o—Bashi.
	tu*l*an—bone.	tu*gh*an—Bashi.
	bu*l*an—moon.	bu*gh*an—Bashi.

M changes into

T	*m*oa—fowl.	*t*oa—Espiritu Santo.
	*m*asina—salt—Malagasi.	*t*asi—Saparna.
B	*m*ata—eye	*b*akka—Enganho.
	*m*uwat—full.	*b*uwat—Dyak.
	*m*erah—red.	*b*ire—Sarawak.
P	*m*akan—eaten.	*p*akan—Javanese.
	*m*ati—dead.	*p*ati—Java. *p*atay—Taga
	*m*asuk—enter.	*p*asok—Tagala.
	*m*inta—beg.	*p*inta—Java.
H	*m*abuk—drunk.	*h*obog—Bisaya.
K	*m*ase—merciful—Lara.	*k*aseh—Sibuyan.
G	li*m*a—hand.	li*g*a—Fiji.
	*m*asina—salt—Malagasi.	*g*asi—Sula Islands.

N changes into

M	*n*ipis—thin.	*m*ipis—Sea Dyak.
	ma*n*uk—bird.	ma*m*uk—Bisaya.
D	*n*ipis—thin.	*d*ipis—Milanau.
	*n*asi—sea—Nias Islands.	*d*ahi—Samoe.
S	*n*iap—fowl—Kayan.	*s*iap—Pakatan.
	pa*n*as—hot.	pa*s*so—Sulus.
L	ma*n*ok—bird—Javanese.	ma*l*ok—Wahai.
	o*n*omo—six—Menado.	o*l*omo—Gorontalo.
	*n*uri—parrot.	*l*ori—Gebe.

K changes into

T	bu*k*a—open.	u*t*ah—Pakatan.
	*k*ras—hard.	*t*eras—Salayer.
B	*k*utu—louse.	*b*utoh—Kayan.

P changes into

M	*p*utih—white.	*m*uty—Teto.	
	*p*anas—hot.	*m*anah—Kisa.	
F	*p*utih—white.	*f*ula—Rotti.	
	a*p*i—fire.	a*f*u—Amblaw.	e*f*i—Matabello.
	*p*anah—bow.	*f*un—Teor.	*f*ean—Mysol.
	*p*uti—box.	*f*ud—Teor.	
	*p*ili—choose.	*f*idi—Malagasi.	
Ch	*p*anchang—palisade.	*ch*anchang—Java.	
	*p*andak—short.	*ch*andak—Java.	
	sa*p*ang—sandalwood.	sa*ch*ang—Java.	
H	a*p*i—fire.	a*h*u—Cajeli	ha*h*i—Teto.
	*p*uti—box.	*h*ueti—Teluti.	
W	*p*utih—white.	*w*ulan—Gani.	
G	*p*aluh—sweat.	*g*alo—Madura.	
K	ata*p*—thatch.	ato*k*—Bugis.	
	*p*isau—knife.	*k*isu—Malagasi.	
N	*p*ulu—ten.	*n*ulu—Timuri.	

R changes into

D	*r*aut—polished.	*d*au—Dyak.	
	*r*atus—hundred.	*d*atus—Baju.	
	bi*r*u—blue.	ma-bi*d*u—Menado.	
Dl	ba*r*is—line.	ba*dl*is—Bisaya.	
	a*r*ao—day—Tagala.	a*dl*au—Iloco.	
G	ba*r*a—live coals.	ba*g*a—Tagala.	
	baha*r*u—new. / ba*r*u—Sunda.	} ba*g*o—Tagala.	
	be*r*kas—faggot.	bo*g*kos—Bisaya.	
	be*r*at—heavy.	bi*g*at—Tagala.	
	be*r*as—rice.	bi*g*as—Tagala.	
	*r*atus—hundred.	*g*atos—Tagala.	
	*r*usuk—side.	*g*osok—Bisaya.	
	*r*ebah—fallen.	*g*iba—Tagala.	
	*r*anggang—open.	*g*anggang—Bisaya.	
	a*r*ao—day—Tagala.	a*gg*ao—Cayag.	

R changes into

H	be*r*as—rice.	be*h*as—Dyak.
	*r*otan—rattan.	*h*otang—Battak.
L	ba*r*ang—thing.	ba*l*ang—Tagala.
	*r*achun—poison.	*l*asou—Tagala.
	*r*ibu—thousand.	*l*ibu—Tagala.
	*r*echik—scatter.	*l*isay—Bisaya.
	*r*ebung—a shoot.	*l*abong—Bisaya.
S	*r*ibu—thousand.	*s*abu—Macassar and Bugi
	u*r*an—rain—Iranun.	u*s*an—Punan Dyak.
T	ba*r*ang—thing.	bo*t*ang—Bisaya.
W	bara—live coals.	wa*w*a—Java.
	*r*echik—scatter.	*w*isik—Tagala.
N	pu*r*ok—short—Sarawak.	pu*n*ok—Lara.
	*r*atus—hundred.	*n*atun—Rotti.

S changes into

D	bu*s*a—foam.	bu*d*ah—Sunda.
R	bu*s*a—foam.	bu*r*a—Battak.
L	bu*s*a—foam.	bu*l*a—Tagala.
	*s*imo—man—Orang Utan of Johor.	*l*imo—Orang Utan of Joh
T	pisau—knife.	pi*t*o—Gorontalo.
	*s*io—nine—Tidore.	o*t*io—Gorontalo.
	*s*ulak—bald.	*t*ula—Tonga.
	tasik—sea.	ta*t*i—Caroline.

T changes into

K	*t*aro yam—Fate.	*k*alo—Ilea.
	*t*oa fowl—Fate.	*k*ua—Solomon Islands.
	fa*t*a-fa*t*a—breast—Samoa.	va*k*ava*k*a—Fiji.
	ma*t*a—eye.	ma*k*an—Kissa.
	*t*alinga—ear.	*k*ilin—Kissa. *k*alé*h*a—En
L	*t*angan—hand.	*l*ungan—Sibnow.
	pu*t*ih—white.	fu*l*a—Rotti.
S	ma*t*a—eye.	ma*s*o—Malagasi.
	pu*t*ih—white.	bu*s*—Mysol.

T changes into

S	*t*asi—sea—Ahtiago.	*s*asi—Menado.
	hu*t*a—ten—Teor.	hu*s*a—Wahai.
	*t*imah—tin.	*s*amah—Kayan Dyak.
N	*t*angis—weep.	*n*angis—Malan.
	*t*anuk—cook—Sarawak.	*n*anuk—Lara.
	*t*uhas—to open—Sadong.	*n*ukas—Lara.
	*t*ulis—write.	*n*ulis—Java.
B	u*t*an—forest.	u*b*an—Bulud Opie.
	u*t*ok—head—Bukutan Dyak.	u*b*ak—Land Dyak.
	*t*ulang—bone.	*b*along—Java.
P	*t*asik—sea—Balan Dyak.	*p*asik—Bukutan Dyak.
	*t*ijih—snake—Kinta Sakai.	*p*iji—Chendariang Sakai.
	*t*uan—lord.	*p*uang—Bugis.
H	*t*aluk—bay.	*h*olok—Kisa.

B omitted.

*b*ujur—length.	ujur—Java.
*b*unyi—noise.	uni—Java.
*b*asuh—washed.	asuh—Java.
*b*ook—hair—Tagbenua.	ook—Achin.
*b*ulat—round.	ulat—Java.
*b*ulan—moon.	ulan—Iranun.
*b*uka—open.	utah—Pakatan.

K omitted.

*k*aki—foot.	ahi—Iranun.
*k*ulit—skin.	uli—Bugis.
*k*aju—wood—Bukutan Dyak.	aju—Samoe.
*k*aluk—embrace.	aluk—Battak.
*k*asih—affection.	asi—Battak.
*k*ikis—efface.	ikis—Dyak.
*k*ibar—float.	iber—fly—Java.

L omitted.

*l*amun—if.	amun—Dyak.

L omitted.

*l*utut—knee.	utut—Dyak.
*l*esung—mortar.	asung—Macassar.
*l*a—day—Kanaka.	a—Marquesas.
*l*alang—sort of grass.	alang—Java.
*l*aki—man.	aki—Iranun.
*l*ibok—hair—Land Dyak.	ibok—Punan Dyak.
*l*oma—heart—Fiji.	uma—Sula Islands.

M omitted.

*m*ana—where.	ano—Tagala.
*m*anis—sweet.	anis—Dyak.
*m*inum—drink.	inum—Java.
*m*uda—young.	uda—Battak young brother father.
*m*uri—return.	ure—Lara.
*m*atinro—sleep—Bugis.	atinro—Macassar.
*m*untah—vomit.	utah—Java.
*m*impi—dream.	impi—Java.
*m*ampelam—mango.	ampelan—Sunda.
*m*inyak—oil.	inyo—Sarawak.
*m*unam—sick.	unam—Lara.

D omitted.

*d*anum—water—Malan.	anum—Milanau.

N omitted.

*n*irong—nose—Iranun.	irong—Bulud Opie.
*n*ipa—tooth—Iranun.	ipun—Sulus.
*n*asu—dog—Nias Island.	asu—Iranun.
*n*anti—wait.	anti—Java.
*n*uran—rain—Tonsea.	uran—Rembokeng.
*n*ubu—deep—Fiji.	obou—Aneiteum.

R omitted.

*r*atus—hundred.	atus—Java.
*r*ibu—thousand.	iwu—Java.

R omitted.

*r*umah—house.	uma—Java.
*r*usuk—side.	usuk—Java.
*r*ebung—a shoot.	ebung—Java.
*r*usa—deer.	usa—Sulu.
*r*ima—hand—Bima.	ima—Sasak.

S omitted.

*s*ilau—nail—Melano Dyak.	ilu—Panun Dyak.
*s*aloi—boat—Melano Dyak.	aloi—Bukutan Dyak.
*s*umpit—blowpipe—Iranun.	umput—Kian Dyak.
*s*isit—small—Melano Dyak.	isi—Bukutan Dyak.
*s*irut—drink—Melano Dyak.	irup—Balan Dyak.
*s*aro—come—Bulud Opie.	aran—Balan Dyak.
*s*aiah—eight—Kian Dyak.	aian—Melano Dyak.
*s*umu—high—Ladong.	omu—Sarawak.
*s*ungei—river.	ungah—Kian Dyak.
*s*ak—ripe—Kian Dyak.	ak—Pakatan Dyak.
*s*ela—stone—Java.	ilah—Timbora.
*s*ingut—bee—Pakatan Dyak.	ingat—Kian Dyak.

T omitted.

*t*ulun—man—Dusun.	ulun—Bulud Opie.
*t*unjuk—finger—Balan Dyak.	unjok—Malan.
*t*ulu—head—Dusun.	ulu—Bulud Opie.
*t*ulan—moon.	ulan—Iranun.
*t*adan—day.	alan—Bukutan Dyak.
*t*apoi—fire.	apoi—Bulud Opie.
*t*inggi—high.	inggil—Java.
*t*enang—calm.	enang—Java.
*t*endas—head—Sunda.	endas—Java.
*t*angan—hand.	angan—Salakan.
*t*uta—head—Bima.	uta—Ceram.
*t*asik—sea.	asih—Patos.

METATHESIS.*

rusa—deer.	ursa—Battak.
pateri—borax.	parti—Battak.
makan—eat.	kuman—Dyak.
ular—snake.	ural—Sea Dyak.
mose—star—Erromango North.	umse—Espiritu Santo.
tuboh—body.	mbutuh—Nias Islands.
semut—ant.	sitom—Bulud Opie.
tikus—art	sikut—Bulud Opie.
timah—tin..	mital—Bulud Opie.
utan—jungle.	tuan—Kian Dyak.
kilat—lightning.	latiga—Samoc.
besok—to-morrow.	suwog—Dusun.
ikan—fish.	kina—Sanguir.
talinga—ear.	tangina—Sida.
dara—blood.	ratta—Yap.
liva—lightning—Fiji.	uila.
unuma—drink—Fiji.	umni—Aneiteum.
lidah—tongue.	dilah—Sulu.
mano—bird—Lariki.	namo—Galela.
manu—water—Bouton.	namo—Ternate.
dikit—small—Batchian.	kedi—Salayer.
naraka—hell.	ranaka—Bugis.

* [Instances of metathesis are common enough in the Malay langu itself. The following are examples:—

beting—a sand or mud-bank. *tebing*—bank, edge.
hampas—refuse Cf. *hampa* empty.) *sampah*—rubbish, dirt.
tara—flat, level. *rata*—flat, level.
tebal—thick. *lebat*—thick, heavy, (of rain or a crop of fruit).
olok—to mock, deride, pretend. *lawak*—to say or do a thing in or sport.

lemukut and *melukut*—broken grains of rice.
rakit and *arkit*—a raft.
saluar and *sarual*—trousers.
ralau and *arlau*—a smelting furnace.

ED.]

Prefixes.

putih—white.	ma-pute—Bugis.
lotong—black—Sembawa.	ma-lotong—Bugis.
tindu—sleep—Sasak.	ma-tinro—Bugis.
itam—black.	ma-itum—Sanguir Island.
biru—blue.	ma-bidu—Menado.
anak—child.	ini-anak—Ahtiago.
muti—cold—Batumerah.	da-moti—Wayapo.
mai—come—Sula Island.	du-mahi—Sanguir. gu-mahi—Massaratty
telo—egg—Wayapo.	me-telo—Sula Island. un-tello—Baju.
tolo—egg—Mysol.	on-tólo—Bouton.
baba—father—Java.	ni-baba—Sula Island. nam-ba-ba—Galela.
ama—father—Salayer.	na-ama—Massaratty.
bapa—father—Gani.	ko-papa—Batumerah.
panas—hot.	um-pana—Amblaw. mo-fanas—Goh.
pito—knife—Gorontalo.	ko-bit—Gani.
tin—mat—Mysol.	ka-tini—Massaratty.
laut—sea.	be-lot—Mysol.
polo—soft—Morella.	um-blo—Mysol.
bulan—moon.	ram-bulan—Java vulgar.
yu—shark.	kluyu—Java.
metan—black—Ke Island.	mul-metan—Mysol.

Decapitation.

ram-but—hair.	buk—Bulud Opie.
ka-pala—head.	pala-ulau—Melano Dyak.
am-pat—four.	pat—Iranun.
ki-chil—small.	chili—Java.
ta-linga—ear.	linga—Milanau.
mi-nyak—oil.	nyauk—Melano Dyak.
bi-tuin—star—Sanguir.	toin—Matabello.

be-tol—star—Gani.	**tulu—Wa**
du-ri—thorn.	**ri—Java.**
ja-latang—rattle.	**latang—J**
de-lapan—eight.	**lapan—Se**
sem-bilan—nine.	**pitan—Ki**
ma-kan—eat.	**kaun—Tag**
be-sok—to-morrow.	**suwog—D**
pi-sang—plantain.	**sain—Sulu**
tu-juh—seven.	**ju—Land**

CONTRACTION.

darah—blood.	**dah—Puna**
tulun—man—Dusun.	**ton—Iranu**
kaki—foot.	**aai—Tagbe**
tulu—head—Dusun.	**ulu—Bulu**
bulu—hair.	**mbu—Nia**
ikan—fish.	**ka—Perak**
bras—rice.	**bah—Puna**
minyak—oil.	**inyo—Sara**
sumpitan—blow-pipe.	**upit—Buki**
bulud—mountain—Bulud Opie.	**bud—Sulu**
sungei—river.	**aung—Per**
tanah—land.	**teh—Perak**
ayer—water.	**ai—Balan**
hitam—black	**ita—Nias**

STRAITS METEOROLOGY.

IN the Annual Summary for 1882, the Officer who is responsible for our Meteorological Statistics stated, truly enough, that "an exhaustive report on the Meteorology "of these Settlements cannot yet be attempted, as the "subject is still in its infancy here." But it does not seem too early to endeavour to obtain some results from the series of Rainfall Returns (1869-83) which the Colonial Government commenced to keep in Singapore soon after the Transfer. and which are now taken with increasing care at nearly twenty stations, situated at intervals along the whole West Coast of the Peninsula. A wider range of observations is also now available in the comparative Tables compiled by the Director of the Batavia Observatory from 166 stations in the Eastern Archipelago, the fourth volume of which (for 1882) has just been received.

The year 1882-3 has been one of peculiar interest to meteorologists. It was both a "sun-spot" year and a "cholera" year, the respective 11-year and 17-year periods happening to correspond. Nor have the theorists been disappointed.

It becomes of interest, therefore, to examine our local Returns with special attention, incomplete though they undoubtedly are for any large generalisations.

In the first place, what are these theories respecting the periodicity of solar and magnetic phenomena and all that is supposed to be connected with them? The last published volume of the new edition of the "Encyclopædia Britannica" (vol. XVI of 1883) explains them, on the highest authority, as follows:—

"105. *Rainfall—Heights of Rivers and Lakes.*—In 1872 Mr of the Mauritius Observatory brought forward evidence sh that the rainfalls at Mauritius, Adelaide, and Brisbane were, whole, greater in years of maximum than in years of minimu spots. Shortly afterwards it was shown by LOCKYER (N December 12, 1872) that the same law was observable in th falls at the Cape of Good Hope and Madras.

"MELDRUM has since found that the law holds for a grea ber of stations, including eighteen out of twenty-two Eu observatories, with an average of thirty years' observatio each. The results are exhibited in the following table:—

[Here follows a list of 22 cities with observations for a age of 30 years, shewing in 18 cities *excess* and in 4 cities *de* rain in the periodical "sun-spot" years.]

"It would, however, appear from the observations of Gov RAWSON that the rainfall in Barbados forms an exception t rule, being greatest about the times of minimum sun-spots.

"106. GUSTAV WEX in 1873[1] showed that the recorded de water in the rivers Elbe, Rhine, Oder, Danube and Vistula f six sun-spot periods from 1800 to 1867 was greater at ti maximum than at times of minimum sun-spot frequency. conclusions have since been confirmed by Professor FRITZ.[2]

"Quite recently STEWART (*Proc. Lit. and Phil. Soc. of Manch* 1882) has treated the evidence given by FRITZ as regards the and Seine in the following manner. He divides each sun p without regard to its exact length, into twelve portions, and together the recorded river heights corresponding in ti similar portions of consecutive sun periods. He finds by means residual differences from the average representing the law, whether we take the whole or either half of all the rec observations, and whether we take the Elbe or the Seine.

1 *Engenieur Zeitschrift*, 1873.
2 *Ueber die Beziehungen der Sonnenflecken Periode zu den Magnet und Meteorologischen Erscheinungen der Erde*, Haarlem, 1878.

law, is that there is a maximum of river height about the time of maximum sun-spots and another subsidiary minimum about the time of minimum sun-spots. There is some reason too to think that the Nile and Thames agree with those rivers in exhibiting a maximum about the time of maximum sun-spots and a subsidiary maximum about the time of minimum sun-spots, only their subsidiary maximum is greater than it is for the Elbe and Seine.

"107. In 1874 G. M. DAWSON came to the conclusion that the levels of the great American lakes were highest about times of maximum sun-spots. In this investigation the value of the evidence derived from rivers and lakes is no doubt greater than that derived from any single rainfall station, inasmuch as in the former case the rainfall of a large district is integrated and irregularities due to local influence thus greatly avoided.

"108. Dr. HUNTER, director-general of statistics in India, has recently shown (*Nineteenth Century*, November 1877) that the recorded famines have been most frequent at Madras about the years of minimum sun-spots—years likewise associated with a diminished rainfall.

"109. *Winds and Storms.*—MELDRUM of the Mauritius Observatory found in 1872, as the result of about thirty years' observations, that there are more cyclones in the Indian Ocean during years of maximum than during years of minimum sun-spots.[1] The connexion between the two is exhibited in the following table":—

[Here follows a comparison of the Cyclones and Sun-spots during the years 1847-73. The maximum number of Cyclones in any one year is 15, the minimum 4, and the steady *ups* and *downs* of the periodic fluctuations are very remarkable. The following are the years of maximum and minimum Cyclones:—

1847,	5	Cyclones
1849,	10	,,
1854,	4	,,
1859,	15	,,
1864,	5	,,
1869-71,	11	,, per annum.

1 *Br. Assoc. Reports, 1872.*

The course of the periodic wave in this table and in the one below exhibiting the Straits rainfall, closely correspond.]

"In 1873 M. Poëy found a similar connexion between the hurricanes of the West Indies and the years of maximum sun-spots. He enumerated three hundred and fifty-seven hurricanes between 1750 and 1873, and stated that out of twelve *maxima*, ten agreed.

"110. In 1877 Mr. Henry Jeula, of Lloyd's, and Dr. Hunter found that the casualties of the registered vessels of the United Kingdom were 17½ per cent. greater during the two years about maximum than during the two years about minimum in the solar cycle.

"111. *Temperature.*—Baxendell, in a memoir already quoted, was the first to conclude that the distribution of temperature under different winds, like that of barometric pressure, is sensibly influenced by the changes which take place in solar activity. In 1870 Piazzi Smyth published the results of an important series of observations made from 1837 to 1869 with thermometers sunk in the rock at the Royal Observatory, Edinburgh. He concluded from these that a heat wave occurs about every eleven years, its maximum being not far from the minimum of the sun-spot cycle. Sir G. B. Airy has obtained similar results from the Greenwich observations. In 1781 E. J. Stone examined the temperature observations recorded during thirty years at the Cape of Good Hope, and came to the conclusion that the same cause which leads to an excess of mean annual temperature at the Cape leads equally to a dissipation of sun-spots. Dr. W. Köppen in 1873 discussed at great length the connexion between sun-spots and terrestrial temperature and found that in the tropics the maximum temperature occurs fully a year before the minimum of sun-spots, while in the zones beyond the tropics it occurs two years after the minimum. The regularity and magnitude of the temperature wave are most strongly marked in the tropics."

It has been thought best to give the whole of this well-digested summary, as it presents, under the authoritative initials of "B. S.,"

the latest information upon the whole question, from an impartial standpoint. The mere reference here made to Dr. HUNTER and others is, however, so brief as to suggest but a fractional part of what has already been done to establish as a fact the recurrence of "the sun-spot and famine period," especially in India.

Since the article in the Encyclopædia, from which I have quoted, was written, the outbreak of Cholera in Egypt last autumn has drawn special attention to the periodicity of that mysterious disease. An account of its recurrence in this century was published in the *Times* last July, without any reference to any question of periodicity, but it was impossible to overlook the similarity of the intervals marked by the dates there given :—

* 1832, 1849, 1866, 1883.

The connection between Meteorology and periodical epidemics forces itself into special notice in this Colony, with regard not only to Cholera, but to another mysterious and fatal disease—"Beri-Beri"—which is a far greater local scourge.

The following extracts from recent official reports regarding outbreaks of each disease will sufficiently show the claim which this matter has on our attention :—

"*Amount of Rain during Cholera Epidemic.*

"109. From the Return attached *(G)* it will be seen that the total rainfall for the year was 66.19 inches, about 30 inches below the average, I believe. During the months when the Cholera prevailed the rainfall was as under :—

1882.			*Inches.*
March,	...	...	2.57
April,	...	...	4.40
May,	...	...	2.36
June,	...	...	3.73
July,	...	...	2.92

* This was the first appearance of Cholera in Europe, but it will be remembered that it was in 1798 [1832 *less* (17 × 2)] that occurred the historical outbreak in Egypt by which BONAPARTE'S movements were so hampered.

so that in those five months the rainfall was rather less than a quarter of that which fell in the year."* [Malacca Administration Report, 1882.]

The facts as regards "Beri-Beri" relate to the recent outbreak in the Singapore Prison, and are shown in an official report as follows:—

"Amount of Rain and number of Beri-Beri Cases:—

	Numbers.	Deaths from Beri-Beri.	Rainfall.
1877, ...	814	22	61 inches
1878, ...	845	65	99 "
1879, ...	777	106	118 "
1880, ...	626	87	102 "
1881, ...	642	35	92 "
1882, ...	806	50	79 "
1883, ...	837	27	66 "

As regards another local disease, "Country Fever," the following authoritative statement on this subject is to be found in the new Encyclopædia's article "*Malaria*":—

"The epidemic prevalence of intermittent and remittent fever in certain years probably finds its explanation in the meteorology of those years, but no uniform law has been discovered."

A subject of more general interest, and one which has already excited some discussion in the Straits, has reference to the effects on rainfall of disafforesting a country. Some say that the loss of our timber has diminished the supply of rain; others deny it, and

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* The Cholera which visited this Colony at the very commencement of the long drought 1882-3 seems to have followed the course of defective rainfall in the various Settlements with remarkable precision—and as the disease appeared rather before than after the rainfall phenomena of the period had declared themselves, the influence must, it seems, have been less hygrometric than magnetic in its origin. The following are the facts:—

In Malacca,	65 inches in 1882,	...	The epidemic was worst.
In Singapore,	88 " "	}	The epidemic was less felt.
In Prov. Wellesley,	92 " "	}	
In Penang,	126 " "	...	There was not a single case.

The *average* rainfall is much the same in all the Settlements.

point to the Rainfall Returns as conclusive. Of this difference of opinion, an example was afforded in the apparently contradictory views published in the Forest Report, 1883, paragraph 25 and Appendix *E*.

In 1880, Mr. WHEATLEY, in his most useful paper on our Rainfall in Journal No. VII, was careful to express no definite opinion; though the necessities of his argument about "the one great influence at work—the monsoons" required him to attach little weight to any local cause.

The enquiry into the degree and mode of this "monsoon" influence has, since he wrote, been much facilitated by the extension of the Dutch observations in Netherlands India, to which I have referred above. The Director, Dr. VAN DER STOK has kindly sent me his Records of Rainfall, in which he is now able to give the mean for four years in 166 stations throughout this great region. The following summary of the 20 principal places, named in geographical order, to the North and South of the Equator respectively, has been compiled from these Dutch Returns; and they show how closely the degree of excess or defect of rain in 1882 followed the degree of North or South in the observing station. The fact of excess or defect is, it will be seen, entirely governed (except in the case of three headlands) by the question whether a place lies North or South of the Equator, which is in this matter presumably equivalent to "monsoon" influence.

TABLE OF NETHERLANDS INDIA STATIONS.

Comparing the Rainfall in 1882 *with the Mean Annual Amount.*
(*in millimetres.*)

[The places in brackets are headlands exceptionally situated, which differ from neighbouring places less exposed. It is noticeable also that while the rest of the Straits followed the law here observed and had deficient rain, Penang, which belongs rather to further India than Malaya, had a marked excess.

The places in italics lie South of the Equator.]

		Average of 4 years M. M.	Rainfall M.
(Acheen)	...	1,769	1,
Deli	...	2,233	1,
Rio	...	2,623	2,
Jambi	...	2,484	2,
Palembang	...	3,075	3,
(Anjer)	...	2,101	2,
Batavia	...	2,012	2,
Sourabaya	...	1,854	2,
(Banjoewangi)		1,485	1,
Tjilatjap		5,054	5,
Bencoolen		3,173	3,
Padang	..	4,640	4,
Singkel	...	4,455	4,
Celebes	Menado 2° N. ...	2,647	2,8
	Macassar 5° S. ...	3,562	4,2
Moluccas	Ternate 2° N. ...	2,402	2,3
	Banda 4° S. ...	3,118	3,4
Borneo	Pontianak (on the Equator)	3,090	3,0
	(*Banjermasin* 3° S).	2,519	2,6

Whether or not "monsoon" laws usually have such rul
fluence, there can be little doubt that the effect of disaffore
on the annual rainfall, whatever it may be elsewhere, i
minimum in the Straits. The difference of opinion on thi
is, it may be surmised, partly due to some confusion b
the mean annual rainfall and the periodical distribution
(as recorded in the numbers of days on which rain fell), an
want of sufficient discrimination in the further matter of
bution, *viz.*, the loss or storage of the rain after falling,
is probably the most important point of all to agriculturists, t
one with which meteorology is only indirectly concerned.

There can be no doubt that temperature, on the other h
closely affected, here as elsewhere, by the loss of forest
the spread of buildings. The existence of Singapore now

two generations; the experience of the first generation was summed up by Mr. CRAWFURD in 1855 with the following statement (Descriptive Dictionary p. 396) :—

"*(a)* January is the wettest and coldest month of the year.

"*(b)* The average rainfall in "a series of years" is 92.69.

"*(c)* The mean temperature is 81.24 and the range from the "mean of the hottest month to that of the coldest is 2.76 only.

"*(d)* Comparing this with the temperature that was ascertained "in the infancy of the Settlement, it would appear that it has "increased (1855) by 2.48, a fact ascribable, no doubt, to the increase "of buildings, and to the country having been cleared of forests "for several miles inland from town, the site of the observations."

A similar summary could most usefully be prepared in 1885 for comparison and record.

The most interesting question of all for our meteorologists is that with which this paper commenced—the question whether we have here recurring periods of drought and rain, due to sun-spots or magnetic influence of some kind. If there is any such period due to solar influence, why, compared with that influence, even the "monsoon" shrinks into a "local" cause, and becomes of comparatively little importance. Mr. WHEATLEY did not like "to "hazard, even by guessing, a rule by which the rainfall of Singa-"pore can be calculated upon." But the Tables he published show that in fact the period of 10½ to 11 years, and the subsidiary period of about 5 years, are peculiarly well-marked in Singapore. Take his figures in Tables VII and VIII, for example: the total numbers of dry days for the 17 years 1864-80 are given for each month the annual totals being as follows :—

1864, 19	1870, 15	1876, 11
1865, **12**	1871, 7	1877, *11*
1866, 18	1872, *13*	1878, 9
1867, *23*	1873, 11	1879, **7**
1868, 13	1874, **9**	1880, 8
1869, **9**	1875, 10	

The size of the type is intended to make the periodic flu clearer. But the resources of typography do not permit regularity of the recurrence to be shown without a diag careful attention is invited to the whole series of figures p in Journal No. VII.

It will be seen, for example, that the driest years respective periods are 1866-7 and 1876-7, and the least and 1879-80.

A comparison of the exceptionally dry months, Januar 1867, (35 dry days) with August-September 1877, (27 d and of the exceptionally wet months, October-December dry days) with March-May 1880 (9 dry days) marks th as one of 10½ years still more precisely.

The same thing is shown by the Table II of Annual Rainf published; the table being brought up to date, the totals periodic year are as follows :—

wet years		inches		dry years	inc
1870	...	123.24	...	1872-3	91.
1875	...	108.48	...	1877	61.
1879-80	...	111.34	...	1882-3	73.

The mean Annual Rainfall may be roughly taken at 100

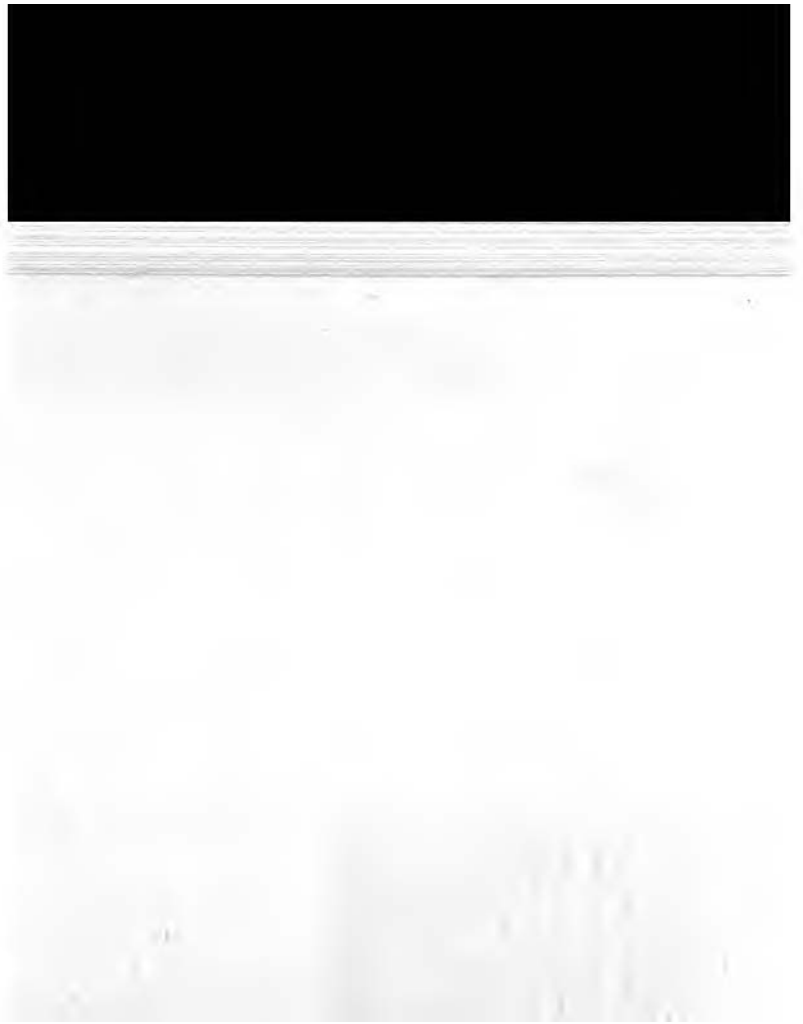
[A diagram with a curved line, starting from the 1869 for the maximum rain, and from the middle of 1872 minimum rain, will be found to move up and down with an perfectly regular curve.]

It is certainly well to wait until we have a larger series nual Returns before generalising on such a matter too pos and this branch of the subject is only touched upon now t the attention of all who may keep or study our Meteor Records. But from the evidence already accumulated, t drought of 1882-83, which ended last August, was, I m clearly to be anticipated; for it closed the solar period from the limited rainfall (160 inches) in 1872-3, and th diary dry period, showing the fall of 148 inches only, in

An excess of rain may, in the same way, be looked for in the years 1884-5, and still more in 1885-6: but not so great an excess, these years merely closing the subsidiary period of excess from 1879-80 (228 inches). It was the year 1880 that closed the full periodic term dating from the phenomenal rainfall of the rainy term—August 1869 to December 1870—(173 inches).

By such calculations as these, predictions about the Rainfall may, I think, be hazarded even now, notwithstanding that we still have insufficient means of deciding the scientific laws that govern the subject.

A. M. SKINNER.



OCCASIONAL NOTE.

—:o:o:—

The *Journal Asiatique* for January, 1883, laid before the public a short article entitled *Quelques Notes de Lexicologie Malaise. Additions au Dictionaire Malais-Français de l'Abbé Favre, par M. Marcel Devic.* The notes which M. DEVIC offered as a contribution to a future supplement of FAVRE'S Malay-French Dictionary include a meagre list of thirty words only, and these seem to have been collected during a perusal of the *Sajarah Malayu*, in the course of which the contributor discovered what seemed to him to be omissions in the dictionary.

M. DEVIC is known to us by a translation of the *Sajarah Malayu*, in which, however, the explanatory and critical notes are few and unimportant.

The dictionary of the Abbé FAVRE found a champion at once in M. ARISTIDE MARRE, who, in a paper which occupies twenty pages of *Le Muséon* (No. 2 of 1883), examined critically M. DEVIC'S contribution. Each note is dealt with in turn, and if M. MARRE is always right, M. DEVIC, with whom he seldom or ever agrees, must be almost invariably wrong. But the criticisms of the writer in *Le Muséon* seem to be often less happy than the suggestions of the contributor of the *Journal Asiatique*. The word *urdi*, which occurs in the *Sajarah Malayu*, has occasioned some discussion; M. DEVIC thinks those wrong who have derived it from the English word "òrder," and supposes that, when the chronicle describes ALBUQUERQUE as going to Europe for *urdi*, it is an *armada* that is meant. M. MARRE points out that, besides "order" in English and Dutch, *urdi* may possibly be referable to *ordem, ordens*, in Portuguese. There is little to be said for M. DEVIC'S emendation, but it is not necessary, on the other hand, to agree with M. MARRE that *le mot "urdi" est Malais*. He will find it to be Hindustani quite as much.

The Sepoy in British India calls his uniform *urdi*, *i. e.*, the c which he has to wear *by regulation*.*

M. MARRE is quite right when he tells M. DEVIC that *bu ular* and *burong kambing* do not mean *oiseau des serpents oiseau des chèvres*, but *oiseau-serpent* and *oiseau-chèvre*. His rection of the proffered translation of *ber-budak* is equally so But why he finds M. DEVIC's translation of *niaris lepas tangan* to be *stupéfiante* is not so clear. The passage quoted dently means that the prince narrowly escaped dying of his ill Malay abounds with figurative expressions regarding death.

Neither of the disputants can suggest the real meaning of *manchong*. M. DEVIC says that *manchong* is equivalent to *panc* and means a garment cut in a point. M. MARRE gives *manc* up, and proposes to read *ber-kain panjang*. The phrase is desc tive of a particular mode of wearing the *sarong*. *Ber-kain chong* signifies to wear the *sarong* caught up short on the r side and long on the left with one end hanging down in front. is considered a sign of ostentation. It is incorrect to confuse *chong* with *munchong*, as M. MARRE does. *Munchong* means snout or muzzle of an animal, *e. g.*, of a pig or dog. If applie the human nose, it means "protruding," not necessarily "aquili FAVRE and KLINKERT have misunderstood a phrase in which word occurs. (Malay Proverbs, Supra, p. 81, No. 269.)

I have not referred to the *Sajarah Malayu* to consult the t which the expression *limau mangkar* occurs. M. DEVIC does find *mangkar* in FAVRE's dictionary, and suggests that it may be name of a country. M. MARRE rejects this idea, and prefers regard the word as a description of a particular variety of *limau*. would not need a great stretch of the imagination to suppose th by a clerical error, *mangkar* might have been written for *mangka* Macassar, and, if this is allowable, here is the name of a coun at M. DEVIC's service. But *mangkar* (*cf. mangkal*) as applied fruit, has a meaning of its own; *durian mangkar* is a *durian* wh though to all appearances ripe, is hard and uneatable inside. *Li*

* *Wardi* is found in Shakespear's Hindustani Dictionary and there s to be derived from the English and to mean "word, order."

mangkar may be equivalent to *limau mangkal*, a green lime just picked, but I do not know if this interpretation will agree with the context.

M. DEVIC would like to derive the Malay words *tuan* and *kiai* (a title), from the Persian, while M. MARRE, with much reason, points out that a Malay dictionary would be hardly the place for suggestions of this sort. Why does M. DEVIC fix upon *tuan* (which he refers to the Persian *tuwanisten*, to be able; *tuvâna*, powerful; *tuwan*, force, power) and leave unnoticed the pronoun اين *ini*, this (Persian, اين *in*, this)?

It is not necessary to examine in detail the other words in the list, and the various remarks made about them by both writers. It may be pointed out, however, that the word بلت, which FAVRE writes *balit*, is really *bĕlit* (compare *lilit*). *Ber-jalan dua tiga bĕlit* signifies, as M. DEVIC states, "to take two or three turns in walking," but both he and M. MARRE, by following FAVRE'S spelling, give an incorrect idea of the pronunciation of the word.

FAVRE'S Malay-French dictionary may, no doubt, be supplemented by hundreds of words, but they will be gathered probably from colloquial intercourse with Malays, and from books not consulted by the Reverend Abbé. The *Sajarah Malayu*, which is one of the authorities most often quoted by the Abbé FAVRE, was not likely to furnish M. DEVIC with much material for new lexicological notes of value.

W. E. M.

MISCELLANEOUS NOTES.

MALACCA IN THE EIGHTEENTH CENTURY.

[The following short paper is a translation from the old Dutch records in the Government Offices at Malacca, by the Government translator, which I have revised a little, and to which I have added a few explanatory notes, for some of which I am indebted to Mr. J. E. WESTERHOUT.

D. F. A. H.]

Extract from the Diary of Malacca in the year 1756.

IN THE FORTRESS OF MALACCA, ANNO 1756.
November, Monday, 1st.

Having some days ago received news here, that Râja SAÏD of Sĕlângor, a relation of DAING KAMBÔJA, had joined the enemy at Klêwang* with all his forces, there was no longer any doubt but that we should hear of them before long.

Our suspicions were confirmed too soon.

The enemy, wishing to shew their heroic valour to their new allies. the pirates of Râja SAÏD lately arrived from Sĕlângor, marched to Gevesteyn,† the country seat of the Hon'ble THOMAS SCHIPPERS. Attorney-General of the Netherlands Indies, taking the road

* This is the place now called Klêbang. It was originally called "Klêwang" owing to the murder of a Malay with an Achinese weapon of that name; so the story goes. But probably the original name was really "Klébang," the name of a tree, and was changed by some Kling or other mispronunciation to "Klêwang" and this story told to account for it. It is about three miles from the Stadt-house.

† This was at Bâchang, near the junction of the Malim and Bâtu Bĕrendam roads, about two miles from the Stadt-house.

rough the jungle round the Lazarus-house.* They had o
fore, some time since, attacked the same place, but had then b
gorously repulsed by the 15 Malay defenders of the hou
ho were well armed with muskets and a blunderbuss. On
casion of this second attack, they placed combustibles at
doors and windows, and the smoke and fire produced by this s
tagem compelled the Malays to surrender after a short resista
hen they were brought as prisoners to Klêwang.

But two of them escaped on the way thither, and brought
news here that the enemy with their whole force were at Gevest

ende ce.

Lieute ered at once to operate aga
them with 80 , together with the Bugis garris
ed here, and 2(inese.

They marched i silence to Gevesteyn, where
enemy were supposed ioned, but on their arrival at t
place, the enemy had fl dy (as was their custom) leav
marks of their visit behind, everything in the neighbourhood h
ing been burnt down, destroyed and ruined.

Our troops before returning crossed to the Lazarus-house, h
ing to meet the enemy there; but on their arrival found the la
had left this place too and gone to Klêwang. So our troops w
obliged to return without having effected their object.

Tuesday, 2nd November.

This morning our Captain STEFANUS ELIAS VAN STEK, leav
the place by Tranquera gate, took the road to the Lazarus-ho
accompanied by our master-carpenter and eighty European s
diers, together with our Bugis and some natives.

According to the instructions of the Hon'ble the Governor,
was to select a suitable place in that neighbourhood for the c
struction of a *bentang* to contain a small garrison with so

* This was at a place called "Lindongan," where boats used to lie for sh
ter: it is now called "Limbongan," and is about two miles from the Stadt-ho
along the road to Tanjong Kling, and used also to be known as "Bak
Plain." The Hospital was supported by a fund.

artillery, as a temporary outpost, to put a stop to the marauding parties, which appeared almost daily right opposite Tranquera gate, * continually alarming the inhabitants on that side of the town.

They had hardly passed the gate, when they received news that the enemy were marching on the town with their whole force divided into two columns, one taking the road by Gevesteyn, the other the main road direct from the Lazarus-house.

The Captain then thought it better to operate against the enemy with his troops, and force them into an engagement if they stood firm. So he at once detached a column of 40 Europeans with 150 Chinese and Malays, all well-armed, towards Gevesteyn to attack the enemy advancing from that side; while he kept with him the other 40 Europeans with the Bugis of the garrison, 50 in number, and a few natives, to meet the enemy coming along the road from the Lazarus-house.

The party marching towards Gevesteyn met the enemy there, more than 300 strong, at halt on a plain quietly taking their food; upon seeing which they quickly advanced and attacked them with a well directed volley from their muskets. The enemy, not at all on their guard, fled to the neighbouring jungle, picking up a few things as they went, but in such a hurry and confusion, that they left behind a great number of arms, bullets and *sârongs*. Thence they fled to the jungle round the Lazarus-house, where our troops could not follow them so easily, but they found the jungle paths stained all over with blood, certain proof that many of the enemy had been wounded.

Our Captain and his troops arriving near the house of the Jenlif (Tamil) Kisna, discovered the enemy on a large plain opposite the Lazarus-house. When they saw our soldiers drawing near, they

*One account says this was so named after a Portuguese man of note: another states that there was a fierce elephant in the neighbourhood at Gâjah Bêrang and hence the name and he would not come any nearer because he saw the place was cleared, "Trangkêra." "Tranquera" means "an obstacle," probably used to denote one of the outworks beyond the fortress. The gate is at the end of Heeren Street, known to the natives as Kampong Blanda, a quarter of a mile or so from the Stadt-house: Tranquera itself extends to a mile or so from the Stadt-house.

fired several rounds, upon which our Captain drew up his troo in order of battle, and returned the compliment with a volley fro whole line. Meantime those of the enemy who had been drive from Gevesteyn came forward out of the jungle behind the Laz rus-house and joined their comrades. Our troops from Gevestey followed their example.

Our forces then marched in excellent order, firing continuous at the enemy, who retired as we advanced. When we reached t middle of the plain, those of the enemy who were hidden in t jungle began to fire with their long Mĕnangkâbau guns, whic carry a very great distance.

Our Captain then at once ordered the Bûgis and native soldie with a few Europeans to place themselves on the right and le flanks, and march against the enemy from all quarters. His orde having been obeyed promptly and with precision by the Bûgis a native troops, the Captain himself with 50 Europeans attacked t centre of the enemy. The latter very soon fell into disorder an fled into the jungle, dragging their killed and wounded with the to Klêwang.

Thus ended the first part of this expedition at 11 o'clock in t forenoon, in which engagement we had not one man wounded.

Our Captain, having taken possession of the Lazarus-hous thought it better not to stay there too long, because the buildin stood in the midst of dense jungle, where the enemy could ver easily conceal themselves without fear of being discovered, an thence injure our troops very much.

He, therefore, resolved to return with drums beating to h former position and stay there till night. After he had returne thither and taken a rest of about half-an-hour, the enemy re appeared in large parties, dancing and shouting most horribl trying to intimidate our troops.

Our Captain immediately despatched a mounted messenger t the Hon'ble the Governor to ask him to send two culverins und a strong escort, which he expected would produce a good effect i this case.

Meanwhile the enemy seemed disposed to hold their position a

the Lazarus-house, whence they incessantly fired on our troops, and we served them with the same sauce.

Our troops were so enraged with the enemy, that it was almost impossible for the Captain to repeat the tactics he had made use of in the morning, viz., of a simultaneous attack on the flanks and the centre, but the enemy did not long resist, soon taking to flight, and this time in such a hurry, that they had to leave some of their killed behind ; they had many killed and still more wounded. But we too had six wounded in this engagement, three of them Europeans and very seriously, three natives very slightly.

Having thus a second time expelled them from the Lazarus-house, the Captain returned to his former position, where he had that day already twice posted his troops.

The two culverins sent for having arrived and been placed on the sea-shore under cover of some small jungle, so that the enemy could not perceive them, the Captain took the necessary measures and those best suited to receive the enemy in such a manner, should they again return, that they would be satisfied for a long time to come. But it seemed that they were already satisfied, for they did not re-appear ; and the Captain after waiting in vain till 5 o'clock in the afternoon ordered the return march to the Fortress.

Saturday, 27th November.

Some days before we had received news that the enemy, more than 500 strong, having forced their way through the jungle, were again stationed at Fĕringgi* near the Malay temple, and were making a very strong *bentang* there, intending to wait there for the approaching dry monsoon, and the arrival of their allies the Mĕnangkâbaus from Rĕmbau, and then with their combined forces to invade Bunga Râya and Banda Ilir, at the same time attacking the town by a descent of the river on rafts, and so to put into execution the infernal project they had long devised of burning

* This place, about two miles from town on the Dûrian Tunggal road, is said to be so named from the man who first cleared the place (a Portuguese) and who afterwards went to Tampin and made an orchard at Dûrian Feringgi, now one of the frontier boundary points.

and destroying all the property and massacreing all the inhabit

The Governor, on receiving this news last night, at once orders that this very day a detachment of 60 European sol with the Bûgis, numbering 50 men, and a battalion of Chinese native military should take the field against the enemy.

The marines and sailors of the vessels stationed here, viz., drei Henvelen" and the "Waereld" with a corps of volunt formed the reserve.

These combined forces, numbering about 300 men, commar by Ensign KRUYTHOFF, lately arrived from Batavia, and Serge MEYER, left this town in the greatest silence at half past four morning, and marched off straight by Panklarame * (Pangk Râma) to Fëring. Though they had a great deal of trouble their way thither, the enemy having covered the roads with in merable caltrops, our troops still reached their destination at past five.

They were only discovered when at a short distance from enemy's *bentang* and the latter, warned by their sentries, were in arms at once, abusing our troops from a distance, and cal out to them to come nearer if they dared.

Our Ensign KRUYTHOFF, knowing this part of the coun thoroughly, then detached the marines and sailors with the vol teers and some natives, and despatched them through the jungl the opposite side of the *bentang*, with the order that they sho fire again when they had reached the spot agreed on. The Bû and one-half of the European soldiers were stationed in the jun right in front of the *bentang*, while the rest of the Europe under KRUYTHOFF himself were stationed at the side of the m road to Malacca. The report of the gun fired by the detac troops was to be the signal for a general attack.

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* "Pangkâlan," landing-place. "Râma" or "Râme" is said to be a cor tion of "ramei," populous; the Dutch spelling does suggest that there been a change in the pronunciation of the word in the lapse of time, the are other derivations which might be equally plausible, such as name "Râma" a Hindu name, dating from pre-Mohamedan days. The p is a little over a mile from town on the Dûrian Tunggal road.

The enemy, unaware of these arrangements, continually shouted at our troops, abusing and provoking them as much as they could.

After the lapse of a quarter of an hour we heard the report of the gun, and thus knew that our companions had reached the intended point. The *bentang* was then attacked from three sides at the same time.

The enemy, remaining firmly in their *bentang*, fought as gallantly as ever a native enemy did. We had expected that they would have come to meet us, but they did not this time, and very much disappointed our soldiers, who, exposed to their fire, had to fight against the walls of their *bentang*.

But when our troops had two or three European soldiers killed, they could no longer be restrained; the grenadiers with their hand-grenades stormed the *bentang*, thus taking the lead of the other troops which followed close on their heels.

This created such disorder among the enemy that they decided to break up their centre, and with their amok-runners in front they tried to cut themselves a way through our troops at two corners of the *bentang*.

Our Commander, perceiving their intention, ordered a general charge with the bayonet, in which close engagement the enemy had 40 men killed, and certainly more than double that number wounded, our troops having fought with the greatest irritation.

After burning down their *bentang*, our various forces were re-assembled, and returned to Malacca with drums beating and colours flying, carrying as trophies the heads of those of the enemy whom they had killed, on the points of their bayonets and lances.

We had six men killed, four of whom were soldiers, one a volunteer and one a Chinaman, and not more than 5 men wounded, among the natives and volunteers, and none of them seriously.

MISCELLANEOUS NOTES.

A TIGER HUNT IN JAVA.

(Extracted from the "Ceylon Observer.")

THE slaughter which takes place among the cattle of Java, Sumatra and Bali, through tigers, panthers and wild dogs, is greater than is supposed. In remote, thinly populated districts, children (not small ones) and even full grown persons are killed by the royal tiger, and now and then similar cases occur in more inhabited places. Even here, in the neighbourhood of Sinagar (below Soekaboemi, Preanger), a thickly populated and almost entirely cleared district, I have had the sad experience that, in a short time, one can lose much cattle, horses and sheep through wild beasts.

In the first four years of my residence here, before I had become acquainted with the use of tiger poisons, I lost in this manner 14 horses and *karbouws.** Since then also I have not been exempt; but by employing the poison which I am about to describe the loss of cattle has gradually decreased.

The poison which was employed by me is a yellowish brown powder, obtained from the bark of a climbing plant called *wali kambing*, found in the low marshy regions along the coasts of Java (among others near Tangerang, in the Bantam province and near Wijnkoopsbaai).

In FILET'S *Plantkundig Woordenboek voor Nederlandsch Indie* (Leyden, GUALTH KOLFF, 1876) the plant is referred to under No. 8,705 :—" *Wali kambing* j. *Sarcolobus spanoghei miq.* Nat. ord. of the *Asclepiadeæ;* loc. Java; creeper. This plant, with others of the same family, is employed to intoxicate boars, tigers and other

* Buffaloes.

quite useless for the purpose, for it would l
ally less active, and finally paralysed.

Among the other plants of the same fa
poisons is apparently also referred to.

As to what FILET says of restoration by bl
agrees with what is said in RIEDEL'S *Sunden*
(Batavia, LANGE & Co., 1865) :—"The root
up with rice or other food, and placed in
which, after eating it, become insensible and t
them they recover." †

The idea of bleeding wild pigs is more o
must be assumed that the operation is to b
lancet or fleam but with *gollok* ‡ or *kleura*
definite surgical purpose.

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* - *Rampog*. To spear animals for amusement: a
each man being armed with a spear, and whenever t
ring, he is received on the spears. The native chi
their *alun-aluns* of this kind of public amusement.
practised upon, which is uncaged in the midst for
Sundanese Dict.

† We give the context of the extract at follows :—
of the liane growing along some parts of the low coast
amongst other places, near the coast from the mouth
Bantam. The root is bruised and mixed up with
and placed in the way of wild pigs, which, after eati
and torpid, but on bleeding them they recover. It
about Batavia. Wali, C. [CLOUGH'S Sinhalese Dictiona
the wood. 'The fruit of a species of Contorta calle
deadly effect on tigers. It is prepared by the admixtu

The statement of Mr. RIGG, that "the root is bruised," is less exact. Although poisonous properties are found in the whole plant, the substance which is used for poisoning is obtained from the innermost bark of the stem. The fine outermost bark is first scraped away: even that of the smallest twigs can used. The *wali kambing* is a plant with whiteish stem and leaves of the same colour. It is said that the fruits can be eaten with impunity. They taste like unripe papaya and have a peculiar shape, from which the *wali kambing* borrows another name. This name, however, for decency's sake, I shall not give.

It may be true that poisoned animals recover by the drawing of blood, but I can neither confirm nor contradict the statement, nor can I give any information as to the effect of the poison under notice on pigs.

It still requires much trouble and expense to obtain good *wali kambing* here, so that I have used the poison only for tigers and wild dogs.

A bitch of an European cross, in pup, was poisoned a couple of years ago, at Ardjasairi, through having partaken only too freely of the carcase of a buffalo prepared for tigers. The dog vomited much, became gradually paralysed, and remained lying three or four days stiff and as if lifeless; it then recovered slowly, and in due course brought into the world half-a-dozen healthy pups, which did not suffer in any way.

I imagine, therefore, though I cannot say it with certainty, that in some cases, when the tiger has not swallowed much of the poison, it may recover from the effects. I know of cases, however, where without doubt poisoned flesh was eaten by a tiger, and yet no trace was to be found of the patient.

In the *Maandblad voor Natuurwetenschappen*, 8th year, No. 3, is a paper by Mr. BOSCHA JZN., Phil. Nat. Cand., "On the Poisonous constituent of *Sarcolobus spanoghei miq.*"

The writer therein details the method and the result of his chemical investigation of a quantity of *wali kambing* sent to him for that purpose by me, and sums up his opinion as follows:—"I consider, from the corresponding indications of the physiological

effect, the smell, and the chemical reactions, that I can pronounce with perfect certainty the poisonous matter of the *Sarcolobus spanoghei* to be coniïne."

Coniïne is the alkaloid to which is ascribed the poisonous nature of the hemlock or *Conium maculatum*—the plant, with the juice of which, according to historical tradition, SOCRATES was put to death.

In the *Natuurkundig Tijdschrift voor Nederl. Indie*, part 15, p. 478, also will probably appear a report on the value and effect of the *wali kambing*. I regret that I cannot here make use of that paper, the more so as it is from the hands of our able chemist and quinologist BERNELOT MOENS and his now deceased brother.

It is known to the people in the neighbourhood here that, as soon as a head of a cattle has been carried off by a tiger, information is at once to be conveyed to me of the fact. I then send persons who are accustomed to make their way through jungle and waste, well armed, to the place where the slaughter has taken place, and the carcase is by them strewn over with poison (for a buffalo a beer glass three-fourths filled is sufficient; for a sheep or goat much less is needed); they are armed, because the tiger is sometimes found to come back again to his prey very quickly. My brother at Ardjasiri went himself two years ago to poison a sheep which had the previous night been taken by a royal tiger out of the fold in the middle of the factory *kampong*, and carried away close to his house through the middle of his vegetable garden. (*N. B.*—The door of the fold, made of plaited bamboo, to which the sheep had been fastened, was dragged by the tiger for some distance.) In the course of the day it was discovered where the tiger had concealed the sheep. Then my brother, at about 5 in the afternoon, forced his way through the high *glagah* * to the place where the sheep lay, he found the tiger already there, which was busy preparing to carry the sheep further into the interior.

The thick cane brake rendered impossible a good shot at the beast of prey, which with amazing springs escaped from the bullet intended for it. The sheep was thereupon carefully prepared,

*The grass *saccharum spontaneum*.

and the following morning at 6 o'clock no trace of it was to be found except a few bloody flocks of wool. Although the whole neighbourhood was up to 2 o'clock the same day thoroughly searched and traced, neither then nor afterwards was anything seen of the tiger.

To prepare the carcase properly, long cuts are made in the fleshiest parts, which are closed again after *wali kambing* has been strewn in them. Of a buffalo, the neck, loins, groin and thighs are the parts most liked by the tiger. The ears also are usually found eaten off.

From the condition in which buffaloes and horses killed by tigers are found, it is to be inferred that horses, colts and young buffaloes are seized sideways or from in front, after which the throat is bitten through. The tiger seizes full-grown horned buffaloes generally by one of the legs, which must then, on account of the desperate efforts of the victim to release itself, be held fast with terrible strength. Skin and flesh are often found under the claws of the tiger, cut in a circular form from the leg. With a stroke of the claw in the groin of the buffalo the belly of the strong beast is torn open, and then, defenceless from pain and loss of blood, it is dispatched. Wild dogs also hunt and seize cattle from behind. On cows which have managed to escape from a troop of wild dogs, I have seen the traces of the fearful bites of these beasts, whole pieces of the flesh being torn from the hinder part of the belly.

A carcase which has been already eaten from during one night or even three, and which then swarms with maggots, is still suitable for poisoning, as the tiger (as also dogs even) is not unwilling to have his game in the condition I found set forth in a French work on pheasants:—"Pour manger un bon faisan, il faut qu'il change de place tout seul."

After having seasoned the titbit, the surrounding population must be warned to keep their dogs fast tied up, or they would otherwise feast themselves on what was not meant for them. On the following day early in the morning, it must be ascertained by means of persons sent whether any of the carcase has been eaten,

and an endeavour must also be made to prevent many people coming to have a peep at the carcase; as though the tiger is not specially timid at night, I have known of cases where, on account of the traces of numerous visitors during the day, the tiger has found it unadvisable to return at night.

With properly armed and trained hunters, and also with dogs, one can trace, when some of the bait has been eaten, the direction taken by the tiger, but this is often difficult and sometimes fruitless.

The almost entirely inaccessible and densely overgrown spot which the tiger choses for his "*kraton*"* makes it extremely fatiguing for Europeans to track him; but, hard though it be, it is a possibility to find a poisoned tiger; to track a healthy tiger is, in my opinion, except by a stroke of good luck, a hopeless task.

The well-known tiger hunts of the English in Bengal are mostly carried out in an entirely different kind of country. There are, as a rule, extensive plains with comparatively moderate undulations. The *jungles* (thick canebrake and scrub) and the *nullah* (small ravines, in which a rivulet or brook meanders and which are sometimes also overgrown) offer little hindrance to the hunter who places himself, with some good weapons, some bottles of soda-water, and the invariable "cheroots" ,in a so-called *howdah* on the back of the elephant, with a *mahout* to guide the animal. The fearless, sharp-sighted elephants do duty as beaters, and so the tigers, roused by a long row of elephants and huntsmen, are shot down from above from the moving *panggung*.†

Even if we had here trained elephants, they would be useless in Java (except on occasional plains here and there), and especially so in the steep thickly wooded ravines of the greater part of the Preanger.

After prolonged drought, tracking is naturally more difficult than in wet weather, when the ground shows the trace of the game more plainly. If it is not found plentifully near the carcase,

* Palace.
† Elevated stage, platform, watch-tower.

attempt must be made to "cut the track," that is search in a wide circle round the place where the game has been and across his track.

If one has good dogs, which are by no means to be had everywhere, they may be utilised (only not close to the tempting smell of the bait). The dogs will probably not attack the tiger, they will generally not dare to go far from the hunter, but they will point out the presence of the game to him if he is acquainted with their habits.

If one is on the right track, vomited flesh and other strongly smelling tokens of the tiger's sickness are found. Sometimes the patient is found dead; sometimes, two days after the eating of the poisoned flesh, still quite ready for the fight. Sometimes also healthy tigers are found keeping company with the sick one; and it is therefore necessary always to exercise the greatest caution. If one comes upon steep declivities caution is still more needful, for the radius of a tiger's spring in a downward direction is much greater than on a flat or in an upward direction.

I once tried to shoot a tiger-panther which was lying above me against a steep declivity, through the head. The bullet went through his ear, and with a spring and a terrific snarl the raging beast stood crouched at my feet. Only by the good help of a troop of dogs did I escape from the claws of the *wali-kambing-ed toetoel.* *

Already, since the beginning of 1863, forty head of royal tigers and panthers and a large number of wild dogs have thus been destroyed by me and my hunters: and by my brother at Ardjasari near Bandoeng, whom I had provided with *wali kambing*, two panthers and six royal tigers.

In 1875, my brother at Ardjasari sent a descriptive narrative of a tiger hunt to his absent wife.

Although this account was not written for public perusal, it seemed to me so suited to be appended in a supplement to my paper

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* "*Tutul.*—Spotted, marked with spots or *blotches*. *Maung tutul*, the spotted tiger, a panther."—RIGG'S *S. D.*

intended for your journal, as a rather more highly coloured il
tration than that paper is, that I sought and obtained the
mission of the writer to do so.

The portion of the letter referred to is as follows:—

"You remember the tract of land which is still wholly u
habited above our plantation, a little below the edge of the fo
that covers the Malabar; where we breakfasted a couple of y
ago with our guests H. and C. under a clump of bamboos, w
served as a tent from the sun? Early in the morning it lo
somewhat less sunny and gay than when we made a little fi
boil the water for our coffee; when seats were placed in a c
round a camp table, and the ladies of our company unpa
boxes rich in promise: and when there was such merry chat
laughter, whilst all eyes feasted themselves on the prospect
the sunny expanse of Bandjaran.

"In the early morning of 2nd February, 1875, it was wet
cold, it had rained the whole night, and thick clouds, from w
still fell steadily a fine chill drizzle, hung gray and chill
heavy over the erstwhile charming landscape.

"On an open patch between the belts lay a dead *karb*
fearfully torn and mangled, and a group of thirty living buffa
stood in melancholy, pensive attitude. What was going o
the buffalo-heads could be gathered by the glance of an eye.
silent beasts were thinking of their deadly enemy, the tiger,
the night before had fallen upon and killed one of their breth
and who had come back that night to feast on his prey. An
melancholy, staring buffalo cow, perhaps mother or aunt of
one so cruelly slain, sniffled in Buffalese to the bull standing n
est to her: 'Hodie mihi, cras tibi!' and the bull shook his ter
horns angrily, as if he would say: 'I would that he would
conclusions with me for once!'

"But see! there comes more life in the misty sombre l
scape. Horses are heard splashing through a stream (you k
the stream into which H. let his shoes fall when he was wa
barefoot through the water, so as not to spoil the patent leath
and out of the fog a hunting train appears: in front is the *djo*

gan * Ardjasari, whom you know, armed with his heavy Forsyth gun, called by the natives *'si mariam'* (the cannon); following him the *'djoeragan gamboeng'* with a clean-shooting central-fire smooth-bore hunting-piece, then several *mandoers*, † SETRA, ALSAH, ALIMON, HASSIM, &c., with less choice firearms, among which are seen some with the barrel bound to the butt and stock with rattan; lastly, ASPAN our cowkeeper, armed with a lance. The horses of the two first-named were led by hand in the rear by a pair of stable-boys.

"The 'file' now appears to become aware of the murder of the buffalo; it mounts and descends, seeks its way through the belts, and at length reaches the place where the murdered *karbouw* lies. The brothers and friends of the slain go respectfully to one side.

"From another direction other men appear; they are descendants of the followers of Confucius, THIO TEN DJOELONG and his son, both with guns, besides the owner of the massacred beast with a number of the inhabitants of the *babakan* ‡ Tji-Enggang bearing no other weapons but the inseparable *gollok*.

"All the men examine the dead buffalo earnestly and carefully, and find to their satisfaction that the tiger, in spite of the rainy weather, has eaten greedily of his prey, which, by order of *djoeragan* Ardjasari, had the previous evening been well spiced, not with *moutarde de maille*, or with Worcester sauce, but with (you know) the fearful *wali kambing*. After some consultation, a commencement was made with the difficult, to us at first apparently almost hopeless, task of tracking the murderer on this

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* "*Juragan*.—A headman or leader in any way. A petty district Chief, the Chief native or Headman on the private estates, who has charge of the police. A headman in a boat. Compounded of *Jura*, an overseer, one who presides over or acts in any department of business, and *Ageng*, Chief, though in the compound word the final *g* is hardly ever heard."—RIGG'S *S. D.*

† "*Mandor*.—A native headman, a village chief. A foreman over work It is the Portuguese *Mandhore*, to command."—RIGG'S *S. D.*

‡ "*Babakan*.—A sub-village; a village whose inhabitants have originally come off as a colony from some other village, as it were peeled off, as we might say swarmed when speaking of bees."—RIGG'S *S. D.*

sodden grass-grown tract. They do indeed find, at a distance a couple of paces, vomited blood and mucus, but nothing sides this is to be found on the ground, which has been was thoroughly during the night. Several *kampong* dogs which h been brought soon show themselves, as nearly always is the c to be not worth their salt; they run unconcernedly, after t masters, and soon everyone is convinced that if they were tied fast they would in a trice give themselves a frightful i gestion with the remains of the tiger table.

" The 14 hunters now disperse to examine the tract patie and carefully in all directions. One of the natives has had luck to see imprinted on an overgrown spot the footprint of tiger; he goes in the direction towards which the claw poi finding now and then an unsavory indication, and at length s at the edge of the densely overgrown steep ravine of the *ka* Tji Enggang, on a place where the tiger appears to have awhile, and where he must have felt very unwell, as evide appears from a great mass of vomited flesh. Hurrah! hurrah! trace is found. The scattered company is called together; tw the most experienced trackers are sent on in front; *Djoera* A. S. follows; his son pushes near to him through the br wood that covers the steep slippery declivity of the ravine order to press his father once more fervently to his breast: ' in God's name he would be cautious!' the cocks of the guns heard uttering a threatening ' tick-tack ' as they are pulled and the long row goes forward descending slopingly along edge of the ravine (in a southern direction or up-stream), led the two trackers, who now and then receive an admonition no be over-hasty and rather to wait a little when they might be in do

" With the exception of several high but widely scattered t this tract was covered with various kinds of brushwood, diffe varieties of bamboo, and in many places thick with *Honjeh* †

* A brook, river.

† " *Honjé.*—A scitameneous plant, formerly called Geanthus speciosus nowadays called Elettaria. The fruit grows on a stalk by itself and forms a round collection of nuts or pulpy seeds. Used by the mountaineers in co in place of Tamarind for the sake of its acidulous properties."—RIGG'S *S. L*

Tepoes * (varieties of Elettaria), among which the *alang-alang* and other grasses were mostly choked; it was therefore certainly thickly shaded, but as a rule one could see to a distance of 10 to 15 paces of himself, with the exception of rougher spots, everywhere intervening, woven throughout with various creepers. The best of this tract for our hunt consisted in this, that the tiger's tracks were easier to find here in the soft clay and rotting layer of leaves than above on the buffalo pasture. Here and there the *golloks* had to be taken in hand to clear a passage for us. Steepness, slipperiness and foot-entangling roots here gave the most trouble. Now and then the leaders lost the trace and all had to come up and look right and left for the right trace again. The tiger had taken a peculiar road: first southwards up-stream; next straight down towards the *kali*, apparently to drink; after that again northwards down-stream. With stubborn patience the *file indienne* of hunters followed through the dripping branches, until, after an hour and a half we saw footprints so fresh that, the particles of earth seemed not yet to have settled down; we also again found vomited flesh, etc., so that we had the certainty, that the right trace was not lost (among other tiger tracks).

"We had forced our way through a patch somewhat overgrown with *glagah*, when the foremost man had suddenly stood still imagining he heard rustling through the foliage; here the trace unexpectedly diverged somewhat to the right; the file of the hunters was somewhat broken in the search for the new trace, R. and the *mandoers* and other natives with him formed a sort of right-wing; ASPAN the cowherd and *Baba* DJOELONG went in front; I was No. 3 of the file. *Baba* was a pace or so in front of me, when I saw him lift his gun. The report of the explosion in the thick jungle mingled with the fierce and to us delightful roar of the tiger found at last. I spring hastily forward, catch a glimpse through the bushes of part of the back and shoulder of the enemy creeping up towards an eminence, black cross-stripes on a yellowish ground—and the deep voice of '*si mariam*.'

* *Tepus.*—A scitamineous plant, Geanthus coccineus."—RIGG's *S. D.*

(96 grains of powder per ball) is heard twice, accompanied by the renewed roar of the tiger.

"Whilst I am busy putting a couple of fresh cartridges in my breech-loader, fire bursts from the right wing, led by R., who meanwhile has executed a flank movement on the enemy. Moving forward a few steps, I then managed to see the whole of the tiger, who is already lying on his back, but still motioning menacingly. All ten shots had struck, and fearful that the rug which I had promised you for your bedroom would be riddled like a sieve I ordered a cessation of fire and approached the tiger within about 12 paces. He was still living, showed me his formidable teeth, and contracted his claws convulsively. By general request I thereupon sent a 'settler' through the enemy's head, who at once sank back powerless, whilst the contracted claws were immediately relaxed.

"Then the natives raised a mad cry of delight. They yelled and fired salvoes of joy as long as they had powder; and whilst R. and I, seated on the decaying trunk of a tree overgrown with moss and ferns, smoked our cigarettes and divided our supply of tobacco amongst all our comrades of the chase, litter-poles of bamboo were cut and a rough sort of rope made from split rattan.

"We confessed to each other (R. and J.), that this result of the hunt far exceeded our expectation; for when in the morning we got on our horses in the rain and rode up more or less numbed, with the prospect of all traces being washed away, the hope was certainly very small.

"In descending the mountain we marched, with the tiger carried by four men in front, in the manner of a triumphal procession through the Tji Enggang *kampoeng*, where lives the owner of the herd of *karbouws*, so many of which had been eaten up by tigers (you know that a week or so ago one of our buffaloes also which was bought for *f* 52, shared the fate).

"Wasn't there joy in Tji-Enggang!

"As we neared home, a corps of nine or ten *angklong* * players met us, for the winged rumor had already preceded us and to the playing of *angklongs* a circuit of the factory was made, at which the natives became fearfully excited.

"You are sure to remember that mad *gegil* † of that time when I came to the house with a *toetoel* which had stolen a calf from us.

"When the tiger was laid in our front verandah between the two middle columns, the court was black with men. Good presents were made to all the hunters and trackers, and the *angklong* players also were not forgotton.

"This is the history of the rug which is to lie in your bedroom.

(Sd.) R. A. KERKHOVEN.

"Ardjasari, 2nd Feb., 1875."

I hope that the above particulars, while they may be thought worthy of a mission to the *Tijdschrift van Nijv. en Landbouw*, will convince the readers that for anyone who has the time and strength to devote to it, the *wali kambing* is an excellent means for getting rid of a number of tigers.

E. J. KERKHOVEN.

Sinagar, 9th July, 1875.

* "*Angklong.*—A musical instrument made of bambus, cut off at the ends like the pipes of an organ, and being strung together on a frame, are shook to elicit their tones."— RIGG'S *S. D.*

† Noise, *tamasha.*

of RAFFLES at Singapore, by an Eye-Witness.

KIM, the name given to this venerable depo
saw, his narrative appears to be strictly co
are so evidently contrary to what would l
venture to question their accuracy. For in
"tin SAPI, an Orang laut, went to bring Tun
"I think he was away four days. Batin S
"then Tunku LONG came."

Now, it is very unlikely that Sir STAMF
some knowledge and experience in Malay
single "Orang laut" to summon to his p
Royal Blood, whom he intended to make Su
to obtain a proper cession of Singapore, and
allow such an erroneous statement pass to
I have made enquiries from the best aut
two Anak Raja, namely, Raja OMBONG a
LAH, were the persons entrusted with the mis
Tunku LONG here, having found him fishing
These Anak Raja received each $500 for th
informant has been Mr. C. F. KEUN, who d
from Tunku PUTEBA, wife of Sultan HUSSE
brother of Raja OMBONG, and from Tunk
account seems generally accepted by the Ma

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*[With reference to this "Note," it may be as w
which the previous "Note" was forwarded for Jou
referred to:—

also, I believe, confirmed by Munshi ABDULLAH in his "Hikayat," but I cannot, at present, refer to the book.

The idea of a Batin being sent on such a mission will make Malays, or those acquainted with their manners and customs, smile; but it is very possible that Batin SAPI accompanied the "noblemen" mentioned above.

W. H. R.

LATAH.

I have received several communications from different quarters upon the subject of my recent paper on *Latah*. On one point, my correspondents seem to be agreed, viz., that the omission of Chinese from the list of residents in the Straits who are afflicted with *Latah*, is due to my defective observation.

It would shew great presumption were I to say definitely that those who have favoured me with their criticism are wrong in their opinion; but it would be equally false humility on my part to admit its correctness, upon the data which lie before me.

In no case have any reasons been given for the assumption that I am in error; nor are any particularised instances referred to by which such error might be corrected or modified.

And I may add, with candour, but I trust without offence, that many of my recent correspondents have had neither length of time, nor favourable opportunities, in Malaya, sufficient to warrant the formation of their very definitely expressed opinions.

I am told by all who have written to me that numbers of Chinese in the Straits are imitative *Latahs*. I am indeed told by one writer that such cases are "numberless."

It could hardly have escaped my notice that there are many Chinese in this country who imitate the words and jestures of others. But this is true of many people in all countries.

It is true of some monkeys * and of a large proportion of
children. †

But I repeat that, after careful observation, I have not me
any Chinaman in the Straits whom I should describe as *Lata*

My remarks upon this section of my former paper were, no
crude and unsatisfactory. But I remember saying that this
sion of *Latah* subjects must not be roughly described as "
idiots."

Now, I should baldly describe all the Chinese in whom I
noticed this propensity as distinctly microcephalic.

In two very marked cases which have come under my not
the last three years, and which, for some time, perplexed me in
very connection, one patient has died insane in the charge
friends in Penang, and the other is now an inmate of the Lu
Asylum in Singapore. I can say, with confidence, that these
are the only instances I have met in which I have had any
as to the absence of *Latah* amongst the Chinese.

That this imitative propensity is common both as the prec
and the accompaniment of certain forms of mental disorder, is
known.

"In certain morbid states of the brain," says Dr. BATEM
his work on Aphasia,‡ "this tendency is exaggerated to an e
"ordinary degree: some hemiplegic patients and others, at
"commencement of inflammatory softening of the brain, *uncons*
"*ly* § imitate every word which is uttered, whether in their
"or a foreign language, and every gesture or action which is
"formed near them." ‖

* Noticeably Cercopitheeus.

† Those who read my former paper will be prepared to hear that I
the existence of *Latah* before pubescence, while I admit, as an inexpli
fact, that, where present, it is persistent in both sexes long after the p
of reproduction are extinct, and, in the case of women, as a rule, ends
with life itself.

‡ Ed. 1870, p. 110.

§ There is no unconsciousness, mesmeric or idiotic, in the actio
a *Latah*.

‖ Similarly *vide* VOGT's "Mémoire sur les Microcépales" *passim*
pecially p. 169, Ed. 1867.

I cannot speak from experience of the ultimate fate of any *Latah* of the imitative class. But I can say confidently that the exhibition of this peculiarity is unaccompanied by any other mental irregularity, except those which I have attempted to describe as pertaining to *Latah*. And in those cases which I have had the opportunity of observing for any length of time, I have satisfied myself that the malady is not progressive.

Further, I have seen many oldish men thus *Latah* who, according to the testimony of their elders, have been so afflicted from the age of puberty.

And lastly, I have never heard an "orang latah" called an "orang gila." Nor have I ever heard any man say of one so diseased, "He will become mad," or "He will die."

For these and other reasons, apart from my own theory on the subject, I am led to believe that this propensity in *Latahs* is an anomaly, distinct from a not uncommon mental disease in other parts of the world, to which it bears some superficial resemblance.

And, until proof is given to the contrary, I rest content with my belief that the peculiarity is one in which the Chinese have no share.

It must be, at all times, dangerous for the unscientific to argue from apparent similarities, the causes of which must be hidden from them.

As I have written as a non-scientist, I must add that I am quite alive to the parallel danger I am running in pointing out differences which stand merely upon the basis of my own unlearned and limited observation.

What *Latah* really is, it remains for some future pathologist to say.

But until "the man has spoken with authority," I trust that no half formed and rash generalization will be suffered to class the imitative Malay with the microcephalic idiot: our snake seer with the victim of alcohol; the rarely found Malay girl-sufferer with the ordinary nympho-maniac; in a word, the unexplained *Latah* with the *Lunatic*, whose mental disorders have now formed the subject of the specialist's investigations for several generations.

H. A. O'BRIEN.

NEW MOUNTAIN SEEN IN PERAK.

On a spur of the Gûnong Bubu Range, which lies a sho
tance inland from the coast of Pêrak, in Latitude 4° 35'
Longitude 100° 50' E., the Government of Pêrak has ope
experimental plantation at an elevation of 3,200 feet on
named Gûnong Ârang Para. The bungalow on this hill is
"The Hermitage," and from that spot I saw, on the morning
15th instant, a very lofty mountain, not previously discerne
this point, though a European (Mr. Bozzolo) has been liv
the hill for more than 18 months.

On the night of the 14th there was a thunderstorm with
rain, and when the morning of the 15th broke, the mountain
could be seen to an immense distance with great clearness.

Looking in an easterly direction across the valley of the
River towards the succession of ranges, which must lie ne
junction of Pêrak, Kĕlantan and Pahang, I noticed what app
to be a lofty mountain with a filmy cloud on its southern slo

Mr. Bozzolo, who was with me, thought there was no
tain, only a cloud, but fortunately we had a powerful telescop
binoculars and with their assistance an exceedingly lofty
tain was distinctly visible at a distance that I guess to have
about sixty miles. I immediately took the bearing of this
tain and found it to be 102°, *i.e.*, about 12° South of East.
mountain has a wide uneven top with steep sides, which rose fr
thick bank of white cloud and through this cloud appeared
or four black spots, evidently the rocky points of another
and nearer mountain or range, while the cloud shewed there
a great distance between them and the more distant and far
lofty mountain which first attracted my attention.

At a rough guess, this mountain looked to me as if it migh
11,000 feet or 12,000 feet high, perhaps even more, for with
radius of 25 miles there were many peaks between 6,000 feet
7,000 feet to judge by.

Within a very few minutes of first sighting the mountain it
no longer visible, and even the cloud seemed to have merged in
haze of the horizon, making it difficult to believe that we had r

seen there a far more imposing height than any I have yet beheld in the Peninsula.

All the other peaks and ranges were still wonderfully clear and I immediately made a sketch of all I could see from the Plus Valley to the limit of vision in the South.

Thinking this sketch would interest the Straits Asiatic Society, I have had a tracing made which I now enclose.*

The tracing is not so successful as I had hoped it might be, but still it gives an idea of the mountain ranges as I saw them, and I trust I may yet be able to furnish you with some further and better information regarding this considerable mountain which lies in the direction of the mountain marked on the Asiatic Society's map as Gûnong Tahan, though that would appear to be more than 100 miles distant from Gûnong Bubu.

The point in that range called on the Society's map "Bukit Chai" is about the position of Gûnong Ârang Para.

The outline of the range which divides the Pêrak from the Kinta River (the highest point of which is Gûnong Mêru) has been made, in the tracing I enclose, rather darker than that of the more distant ranges.

The highest ground between the Plus and Kinta valleys is not more than 300 feet, and this is imperceptible from "The Hermitage," so that the Kinta valley appears to come round the back of the Mêru range into the Plus valley.

The range of hills which divides the head waters of those rivers which drain into the Plus valley, and ultimately into the Pêrak River, is not very distant from the East Coast of the Peninsula and an officer of this Government (Mr. CAULFIELD), who did not get nearly to the sources of these rivers, told me he had seen the waters of the China Sea from the point he *did* reach, this feeder of the Pêrak River stretching far to the West and North, and taking its rise in a very lofty range of mountains well within sight of the East Coast of the Malay Peninsula.

F. A. S.

Kuâla Kangsa,
21*st April*, 1884.

* To be seen in the Library. [ED.]

[Mr. McCarthy, a Surveyor who accompanied a Siamese
missioner, in August last, to meet the Resident of Perak ne
frontier of Patani where it borders on Ulu Perak, ascended a
tain called Gunong Hangus close to the border. "It is about
"feet high and presented no considerable difficulties in the a
"He got an excellent set of angles including Gunong Ina
"the high peak of Patani *and also saw a mountain of very*
"*elevation to the Eastward of South, fifty or sixty miles off.*
"is probably the one mentioned by Deane as more than 1
"feet high, which is supposed to be in Pahang behind th
"Bernam." Sir Hugh Low's Journal, Aug. 23rd, 1883.

W. E.