Notes on the Localities given in Longicornia Malayana, *with an estimate of the comparative value of the collections made at each of them.* By ALFRED R. WALLACE.

IN order that students of this work may not be misled by considering the materials on which it is founded to be more complete than they really are, especially as regards the geographical distribution of the species and the comparative richness or poverty of the several islands, I think it advisable to give a short sketch of each locality, an account of my opportunities for obtaining *Coleoptera*, and especially Longicorns, and an estimate of its probable richness compared with other districts in the Archipelago of nearly equal extent. I take the localities and islands in the order in which they are arranged in the foregoing tables.

Penang. The small collection from Penang consists of a few insects given me by Mr. Lamb on my way home, and of a few more collected by a native sent there by a friend. It gives no idea of the productions of the island, which, however, are probably not very numerous, as a large portion of it is more or less cultivated. The opposite coast of the Province of Wellesley has produced many fine and remarkable Longicorns, as may be seen by Mr. Pascoe's paper, published in the Proceedings of the Zoological Society for 1866.

Malacca, Mount Ophir. I spent about two months collecting in the interior of Malacca, ten days of which were passed at Mount Ophir; but I found no very good localities for insects, and accordingly devoted most of my time to Ornithology. Many parts of the country are covered with fine forests, and ought to be very productive if well worked under favourable conditions.

Singapore. My chief collecting ground was at Bukittima, a Roman Catholic Mission Station in the centre of the island. Here were several patches of forest on the tops of low hills, and on one of these, about a square mile in extent, I obtained nine-tenths of my Singapore collections. A few statistics of these may be interesting. The first day I went out, I captured eleven species of Longicorns; in a fortnight I had sixty species; in a month near 100 species, (besides 140 *Rhyncophora* out of

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520 *Coleoptera*). I collected for about two months in Singapore, a week of which was spent at Pulo Ubim, on the northern side of the island, and a poor locality. That the collecting ground was not nearly exhausted is proved by the fact, that on going to the same spot again in 1856, I obtained in eighteen days eighteen new species of Longicorns. My success was due to several favourable circumstances. The patch of forest I collected in was on tolerably level ground, with a moist soil, the trees very lofty, with tolerably thick undergrowth; and it had been for some years frequented by Chinese wood-cutters, who had made numerous saw-pits, and had left the branches, and many of the trunks, lying about in every stage of decay. Food was thus furnished for a great variety of insects, and in a little more than two months I was able to collect about 700 species of *Coleoptera* (of which 135 were Longicorns) in a very limited area.

Sumatra. I spent a little more than two months in Sumatra, but it was the wet season, and I did not reach the finest country for insects in the valleys of the central range of mountains. My collections, therefore, give no adequate idea of the entomology of this great island, which I have every reason to believe is, at least, as productive of insect life as any other in the Archipelago.

Java. I spent two months in the Eastern part of Java (July to September, 1861), when it was excessively hot and dry, and scarcely any insects were to be found, and about six weeks in the Western part (September, October), when it was so exceedingly wet and gloomy as to be equally unfavourable for insect collecting. Under these circumstances, my time was chiefly devoted to birds, and the very few species of Longicorns I obtained must not be held to indicate any poverty in this luxuriant island, which, I believe, still offers a fine field to an energetic collector.

Borneo. I spent nearly fifteen months in Sarawak, but as I arrived at the beginning of the rainy season, the first six were very unproductive in insects, as were also the last four, which were spent in short voyages, or at the town of Sarawak. Almost all my insect collections were made at Simunjon, where some coal mines were being opened, and about fifty Chinamen and Dyaks were kept at work clearing forests, making roads, building houses, &c. I reached this spot on the 14th of April,

1855, and the next day commenced work. I rarely went more than a mile from the house, and I may safely say that nine-tenths of my insects were collected on a piece of ground about half a mile square. The following statement of the progress of my collections will show what a wonderfully rich spot this was.

1854. Nov. 1st to 1855,	Number of Species.		Remarks.
	Coleoptera.	Longicorns.	
Mar. 15...	320	34	About four months collecting, wet season.
April 15..	916	152	At Simunjon, hot sunshine with showers.
May 15 ..	1163	197	„ splendid weather.
June 15..	1293	226	„ very hot.
July 15 ..	1400	234	„ „
Aug. 15 ..	1550	248	„ hot and dry.
Sept. 15..	1700	268	„ „

During almost the whole month of July, I was confined to the house by a wound in my foot, and only obtained a few specimens from the Chinamen, and from my assistant, Mr. Allen, who was then very young and inexperienced. Almost the whole of the thirty-four species of Longicorns obtained before arriving at Simunjon, were found there also, so that I collected about 270 Longicorns in six months on a square mile of ground. A considerable number of these were single specimens, and even when several specimens were obtained, they were, in many cases, found only on one spot and on one occasion. This gives a kind of accidental character to a large part of the collection, and renders it probable that this limited tract was not even approximately exhausted. Until, therefore, other localities in Borneo are thoroughly worked under equally favourable circumstances, it is impossible to form any estimate of the total number of species of Longicorns which may exist in that vast island.

Macassar. Although I spent nearly seven months in Southern Celebes, I obtained few beetles, and especially few Longicorns. This is owing to the country being so very open and so much cultivated, and to the seasons being so extreme; for seven months excessive drought, and for five a deluge of water. The forests of the interior would, however, no doubt produce many fine new things.

Menado, Tondano. Northern Celebes is much more wooded and has a better climate than the South, yet my nearly four months collecting there did not produce many *Coleoptera.* I am inclined to believe that in all forms of life Celebes is really deficient in variety of species, although it produces a number of very curious and interesting forms.

Sula Islands. These were visited by Mr. Allen, who devoted himself chiefly to birds. Being a small outlying portion of the Celebes group of islands, these are probably poor in species of insects.

Lombock. A volcanic island, with a very dry climate and thorny vegetation. I spent two months there, but finding it almost barren in insects, devoted myself chiefly to bird collecting.

Flores. A volcanic island, but much larger and more fertile than Lombock. Mr. Allen spent between two and three months here, but obtained very few insects.

Timor. This large island is the poorest in the whole Archipelago for insects, owing to the dryness of the climate and the almost entire absence of forest. I spent more than four months there, and the small number of Longicorns obtained fully represents its comparative productiveness.

Bouru. I was two months in this island, but it was the wet season, and I was obliged to employ men to cut down the forest or I should have got scarcely any Longicorns. The country consists in a great part of open grassy hills with a scattered vegetation, and is decidedly inferior entomologically to Batchian.

Amboyna. My insect collections here were almost all made during three weeks spent at a new plantation in the middle of the island, in January 1858. Here were several acres of newly cleared jungle, and by searching daily among the stumps, trunks and branches, I obtained nearly three hundred species of beetles, of which about fifty were Longicorns.

Ceram. This large island seemed to me very deficient in all forms of animal life. My collections were made at many points on the south coast, and Mr. Allen collected at Wahai on the north coast. To few places have I devoted more time and trouble, and the number of species obtained must be held fully to represent its comparative productiveness.

Banda. A small island devoted to the cultivation of the nutmeg, and not likely to be very productive in insects. I visited it on three occasions, but spent only one or two days there on each visit.

Goram, Manowolko. These small islands have scarcely any forest vegetation, and are therefore necessarily poor in insects. I collected for a week or two on the former, and for a few days on the latter.

Matabello. Small coralline islands, with no forest. I spent a week there in April 1860.

Ké. Islands chiefly of coralline limestone, covered with a grand forest vegetation. I spent five days there in January 1857, and tried to reach them again in 1860, but failed. I believe they would well repay a thorough exploration by an entomologist.

Morty. Mr. Allen spent about two months on this island, and obtained a rather better collection than on Gilolo, owing to there being some natives engaged in clearing forest.

Gilolo. I never myself found a good collecting ground on Gilolo, and did not spend more than a month there. Mr. Allen collected for about a month in the northern part, but did not obtain a great number of insects. I believe it to be rather poor, owing to its volcanic soil, and somewhat stunted forest vegetation.

Ternate. This small volcanic island cannot be very rich in Longicorns, and I believe that the number I obtained is a fair sample of its productions.

Makian. The species from this island were obtained during a few hours' visit.

Kaioa Islands. During five days here in October, 1858, I collected about one hundred species of *Coleoptera*, and saw a greater quantity of large and showy species together than I have ever seen elsewhere. The islands are very small, and consist chiefly of raised coral rock. It was the dry season, and a patch of forest had been cut down a few days before, and every trunk and branch swarmed with beetles. I obtained forty-four species of Longicorns, some of which seem to have been overlooked in the catalogue as occurring in this locality.

Batchian. I spent six months in Batchian, and worked steadily all the time, yet I did not obtain as many species as in Singapore in two months. I impute this to a real deficiency of species in the Eastern compared with the

larger Western islands of the Archipelago. Batchian is a most luxuriant and fertile island, with a varied soil, and a fine moist climate, and I had very good collecting grounds, so that I believe my collections fully represent its entomological richness as compared with other parts of the Archipelago.

Aru Islands. I spent six months here, but was only for a short time in the best part of the islands, and was there much hindered by a wounded foot, which confined me to the house. Both here and at Dorey, therefore, I believe that my collections do not give any adequate idea of the richness of the district.

Dorey. I spent three and a half months at Dorey, on the North coast of New Guinea, and although much hindered by illness and by bad weather, made a very good collection of insects. The locality, however, was not a good one, being almost entirely a raised coral reef densely covered with forest, and with very few paths or clearings; so that I am inclined to think that under more favourable conditions, New Guinea would rival Borneo as a collecting ground, and far surpass it in the beauty of its productions. I obtained here over a thousand species of beetles, and one day captured ninety-five species, the largest number I find recorded for a single day's work.

Saylee, Salwatty. These places at the North-west extremity of New Guinea were visited by Mr. Allen, who made a tolerable collection in the two months he spent there, and I have every reason to believe that it is at least as good a district as Dorey.

Mysol. The collections from Mysol were made by Mr. Allen, who was there nearly six months altogether, but did not find very good localities for *Coleoptera.* It is probably not so rich as the main-land of New Guinea.

Waigiou. I was nearly three months at Waigiou, but never found a good locality for insects. This is partly owing to the natives living so much on sago, and scarcely ever clearing the forest for cultivation. The number of Longicorns I collected is much less than would probably be obtained under more favourable circumstances.

Gagie. I was only a few hours at this small volcanic island, on my way from Waigiou to Ternate.