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NOTES ON THE COLLECTION OF LAND-MOLLUSCA MADE BY DR. E. JACOBSON ON THE ISLANDS OF SIMALUR AND BABI IN 1913, WITH DESCRIPTIONS OF NEW SPECIES AND RACES

by

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I am indebted to the authorities of the Leiden Museum for the opportunity of examining and reporting on the large collection made by the late Dr. E. Jacobson on Simalur island and on its smaller satellite Pulau Babi, in 1913, between the months of January and September.

The collection is large enough to enable one to study good series of a number of the forms collected, and to justify the naming of several new races. Some new forms had already been named by Dr. C. A. van der Willigen, who studied the collection several years ago. Whenever possible I adopted Dr. van der Willigen's MS names.

It is now possible to compare the faunas of Simalur Is., Nias Is., and Enggano Is., but the fauna of the Mentawi islands is unfortunately still very imperfectly known.

I have to thank Dr. L. A. W. C. Venmans for figures of the radulae of several species of which he has kindly made preparations, and Mrs. van der Feen (née van Benthem Jutting) for helpful notes. Also my thanks are due to Dr. van Regteren Altena for the trouble he has taken in making the collection available to me. And lastly I must record my indebtedness to the late Mr. Wilkins of the British Museum (Natural History) for the three figures of new forms described below, and for other help which he always was ready to give.

Large though the collection is, I do not doubt that future collecting will add other forms to the Simalur list. Any conclusions, therefore, made from the present list are subject to reservations.

The type-specimens of the new forms described below are in the Leiden Museum.

Sulfurina behniana (Pfeiffer, 1859)

Simalur, 49 ex. (42 of these are "spirit specimens"): from primary forest (without exact locality), 1 ex. July; Sibigo, 21 ex. August, 4 ex. November; Sinabang, 7 ex. June; Labuan Batjan, 1 ex. June; Sua Lamatan, 3 ex. June; Lasiching, 12 ex. June.

A species first known from the Nicobar Is.; it has been recorded also for Nias Is. by Jutting (1934).

The Simalur specimens are uniformly yellow, or dull straw-coloured. Fully grown individuals average just 5 mm in diameter. The radula is about 3 mm in length, and has 73 rows of teeth.

Sulfurina bensoni Wagner, 1907 (fig. 1*a*)

Pulau Lekon near Simalur, 22 ex. (all "spirit specimens") March.

They agree in size with Wagner's type, fully grown specimens have a diameter of about 3.5 mm. They are uniformly of a pale brown colour, and show no colour banding. The radula has a length of about 2.3 mm, with some 78 rows of teeth.

This is also a Nicobar species and has not hitherto been recorded from elsewhere.

Leptopoma niasense Fulton, 1907

Simalur, 31 ex.: without exact locality, 7 ex. June; Sibigo, 8 ex. April; Sibigo, 3 ex. August; Sua Lamatan, 2 ex. April; Lasiching, 11 ex. April.

Pulau Babi, 5 ex. April.

Theobaldius dautzenbergi (Fulton, 1907)

Simalur, 21 ex.: from primary forest (without exact locality), 2 ex. July; Sibigo, 6 ex. September; Sinabang, 2 ex. January; Sua Lamantan, 4 ex. June; Lasiching, 7 ex. April.

Cyclophorus (Glossostylus) schepmani nov. spec.

Simalur, 45 ex.: from primary forest (without exact locality), 2 ex. July; Sinabang, 35 ex. (among which the holotype) February; Sua Lamatan, 2 ex. April; Lasiching, 6 ex. April.

Turbinate, moderately depressed, solid shell of about 5½ whorls. Suture well impressed. Umbilicate, but umbilicus covered by a process of the peristome. Aperture relatively large, slightly oblique; peristome well reflected, flesh-coloured, and in some examples reinforced by a "metastome". Upper whorls uniform brown, lower whorls with the upper surface boldly streaked with nearly equidistant, zigzagged bars, lying radially; of a dark brown

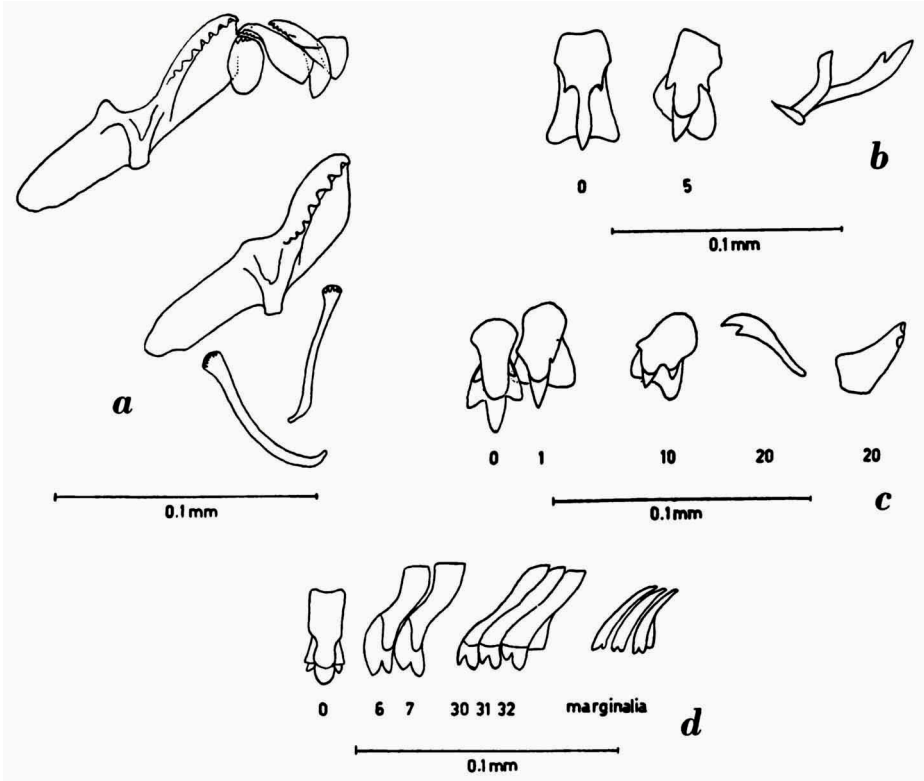

Fig. 1. Teeth from the radula. *a, Sulfurina bensoni* Wagner; *b, Tanychlamys*? spec.; *c, Xesta*? spec.; *d, Helicarion hyaleus* (Bock). Venmans praep. et del.

colour on a yellowish-white ground; and with a white, spiral band at the periphery. Immediately below the periphery is a blackish-brown, spiral band about 4 mm in depth. Umbilical area yellowish-white with irregular, radial brown markings. There is a very slight shouldering of the periphery of the last whorl, best detected by touch.

The two specimens from the primary forest are largely yellow in colour, with few quite irregular, brown streaks.

The peristome shows a distinct embayment of the columellar limb where the expansion over the umbilicus is developed.

Size variable. Measurements:

Large example:	shell:	height 36 mm,	breadth 50 mm;
	aperture:	height 27 mm,	breadth 25 mm.
Small example:	shell:	height 30 mm,	breadth 35 mm;
	aperture:	height 19.5 mm,	breadth 20 mm.

Under a hand-lens the surface of the shell shows fine radial striation, and less marked spiral striae.

C. schepmani resembles the Sumatran *C. egregius* von Martens in having the peristome flesh-coloured, but differs in that the latter has a blunt keel on the last whorl, and strongly marked spiral lines. The Sumatran shell is larger and differs also in colouring. Rensch (1934) treats *egregius* as a race of the Indochinese species *C. trouiensis* Wattebled. So far as I know nothing like it or *egregius* occurs in Peninsular Malaya. Another Sumatran species, *eximius* Mousson, has a colour pattern not unlike that of *schepmani*, but has a white peristome, and strongly developed spiral ridges. It too is larger than *schepmani*. Rensch (1934) puts *eximius* into the group *C. rafflesi* Broderip & Sowerby. This group is represented in Malaya by *semisulcatus* Sowerby.

Cyclohelix nicobarica Pfeiffer, 1865

Simalur, 25 ex.: Sibigo, 3 ex. August; Sua Lamatan, 10 ex. April; Lasiching, 12 ex. (4 juv.) April.

Pyramidal, of about 5 whorls, base flattened, marked off by a definite carina, which lies immediately below the periphery of the last whorl. Aperture oblique, peristome thick, reinforced, with a blunt projection on the columellar margin. Umbilicus almost or quite covered by the peristome.

Colouring in unweathered specimens, cinnamon brown, with small, yellow flecks, most evident on the fourth whorl, lying directly below the suture. Peristome flesh-coloured.

Measurements:

Large example:	shell:	height 22.5 mm,	breadth 21 mm;
	aperture:	height 9 mm,	breadth 11 mm.
Small example:	shell:	height 18.5 mm,	breadth 18 mm;
	aperture:	height 8 mm,	breadth 10 mm.

Rather larger than the type from the Nicobars. Gude (1921) gives the height of a specimen in the British Museum as 15 mm, and of a larger example, which he suggests may be distinguished as "var." *major*, as 21 mm. The colouring in the Simalur specimens seems rather more uniform. If they prove to belong to a distinguishable race the appropriate name subsp. ***nux*** suggested for them by Dr. van der Willigen can be used.

Cyclohelix crocata (Born, 1778) subsp. **jacobsoni** nov. subsp. (fig. 2*a*)

Simalur, 32 ex.: from primary forest (without exact locality), 4 ex. (among which is the holotype) July; Sibigo, 7 ex. August; Sinabang, 8 ex. May; Sua Lamatan, 4 ex. April; Lasiching, 9 ex. April.

Pulau Babi, 3 ex. April.

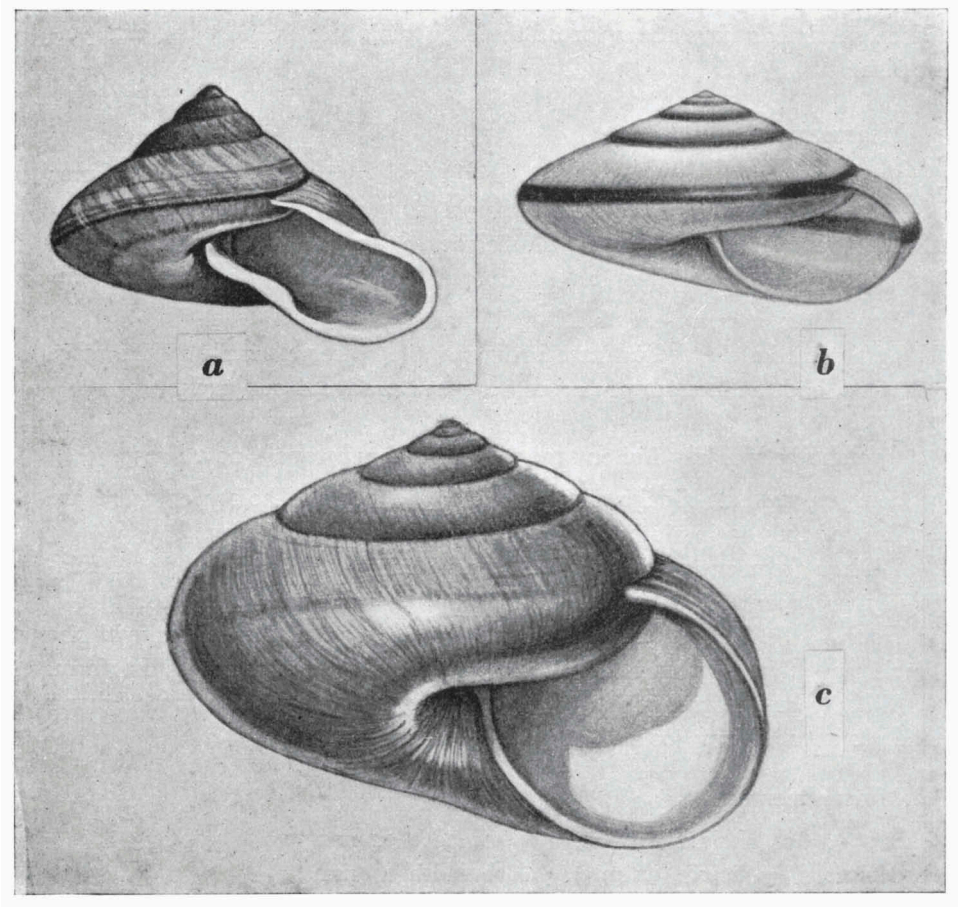

Fig. 2. *a, Cyclohelix crocata jacobsoni* nov. subsp., holotype; *b, Xesta*? spec.; *c, Hemiplecta simalurensis* nov. spec. Wilkins del. *a, c,* × 2; *b,* × 3.

Shell of about five whorls, rather thin, pyramidal, with base flattened and periphery slightly keeled. Umbilicus small, covered by the reflected peristome, which is white and not reinforced. Five or six of the shells, including the type, have a small knob-like thickening of the middle of the columellar limb of the peristome. There is no callus. The aperture is oblique and rather produced. The outer lip is generally slightly deflected immediately below the suture. The upper whorls are brownish pink in colour, the lowest two have radial, zigzag, brown streaks, which are continued and to some extent intensified for a short distance below the periphery; the peri-umbilical area is whitish. In some examples the brown markings are complicated by two or

more continuous, spiral bands, between the suture and keel of the last whorl. Nine specimens have the apex of the shell pink and the rest uniform yellowish.

Measurements:

Holotype:	shell:	height 19 mm,	breadth 25 mm;
	aperture:	height 12 mm,	breadth 15 mm.
Small example:	shell:	height 16 mm,	breadth 20 mm;
	aperture:	height 9.5 mm,	breadth 12 mm.

Operculum horny, very thin.

Differs from the typical race in having the spire relatively a little more elevated, and the mouth opening rather more produced outwards.

Cyclohelix kibleri (Fulton, 1907) subsp. **simalurensis** nov. subsp.

Simalur, 22 ex.: Sibigo, 21 ex. (among which the holotype; there are 7 juv., of these 3 in alcohol) August; Loe Dalam, 1 ex. May.

Differs from examples from Nias in having the spire less elevated relatively, the aperture rather less oblique, and a little more produced.

Four of the Sibigo examples are pale, uniform yellow in colour, with the peristome white. Otherwise the colouring is much as in the Nias Is. form.

All fully mature individuals have the peristome strongly reinforced, giving the mouth a clumsy look.

Measurements:

shell:	height 24 mm,	breadth 32 mm;
aperture:	height 12 mm,	breadth 17 mm.

Cyclohelix kibleri (Fulton, 1907) subsp. **babiensis** nov. subsp.

Pulau Babi, 28 ex. April.

Smaller than the Simalur race, the aperture relatively more rounded, and the columellar tooth scarcely developed. The shell is generally less solid, and the size perhaps more uniform. Colouring on the upper whorls brown, the lower two with a yellowish-white ground, and close-set, radial, zigzagged streaks of brown. Two examples are almost uniform yellowish-brown. The peristome is generally reinforced.

Measurements:

shell:	height 20 mm,	breadth 25 mm;
aperture:	height 11 mm,	breadth 12.5 mm.

The smallest specimen of the series has a breadth of 22 mm.

The subsp. *babiensis* differs from the Simalur race in being definitely smaller, with a more rounded aperture, and generally in having more vivid colouring.

Jutting (1948, pp. 554-555) has noted the occurrence of a form of *C. kibleri* in W. Java, where it was found by W. C. van Heurn at an elevation of 1600 m.

Pupina (Tylotoechus) degneri nov. spec.

Simalur (without exact locality), 7 ex., from the hollow decayed trunks of sago-trees.

A small, rather narrow species, white or pale horn-coloured, with a glossy surface, of about 5 whorls. Aperture vertical, circular, with white peristome and callus. On the columellar limb of the peristome there is, at about its middle, a narrow, horizontal notch, with slightly thickened edges, and a second less well marked groove lies at the point of junction of the outer lip and the callus. Operculum thin, horny.

Measurements:

shell:	height 6 mm,	breadth 3 mm;
aperture:	height 2 mm,	breadth 2 mm.

Somewhat resembles *nicobarica* Pfeiffer but is smaller, relatively a little narrower, and with the mouth more nearly a perfect circle. The outer notch is very much less developed than in the Nicobar species, and its margins are scarcely thickened.

This new species is named after E. Degner, who has listed the known land-mollusca of the Mentawi Islands.

Assiminea javana (Thiele, 1927)

Simalur, Bangkal, 29 ex. June.

Recorded and figured by Jutting (1934) for Nias Is. under the name *A. sinensis* Nevill. Mrs. van der Feen tells me that this identification was wrong and will be corrected in the forthcoming fifth part of her critical revision of Javanese non-marine Mollusca.

Pseudonenia jacobsoni Loosjes, 1953

Simalur (see Loosjes, 1953, p. 100).

Subulina octona (Bruguière, 1792)

Simalur, Lasiching, 17 ex. April.

Taphrospira spec.

Simalur, Sua Lamatan, 1 ex. April.

Immature. Shell fragile, translucent, dark brown in colour, a little paler about the umbilicus. Whorls 4½, flattened above, globose below, with the umbilicus minutely perforate. On the upper surface a spiral gutter-like channel runs round the suture. This channel is about 1.5 mm in breadth on the last whorl, and is bounded outwardly by the dorsally directed carina. At the aperture the outer lip passes horizontally outward from the middle of the preceding whorl as far as the carina, then turns, at first vertically downward, then makes a semicircular sweep inward towards the umbilicus.

Measurements:

shell:	height 8 mm,	breadth 10 mm;
aperture:	height 5 mm,	breadth 7 mm.

Perhaps a race of *T. bathycharax* Godwin-Austen from the Andaman Is. In 1933 Rensch described a race of *T. convallata* (Benson), a species from Lower Burma and the Mergui Archipelago. To this race, which he records from the island Pulau Weh off the N. coast of Sumatra, he gave the name *sabangensis*. He was able to describe the anatomy of this form, and found that it had a well-developed amatorial organ. The anatomy of the type form *convallata* has not been described. Rensch concluded that *sabangensis* showed a relationship to *Tanychlamys*.

Godwin-Austen (1907, p. 177, pl. III fig. 1-1f) described the anatomy of *bathycharax* and found that this species had no amatorial organ. According to Rensch (loc. cit.) the discrepancy must be due to wrongful reference of *bathycharax* to the same genus as *convallata*, or possibly to a mistake on the part of Godwin-Austen.

Degner (1928) records *convallata* from Soekaranda.

Trochomorpha crassicarinata Fulton, 1907

Simalur, 3 ex.: Sibigo, 1 ex. September; Sinabang, 1 ex. January; Lasiching, 1 ex. April.

Pulau Babi, 1 ex. April.

Only known otherwise from Nias Is.

Trochomorpha niasensis Fulton, 1907

Simalur, Lasiching, 1 ex. April.

Another species hitherto only recorded from Nias Is.

Tanychlamys? spec. (fig. 1*b*)

Simalur, 17 ex.: Sibigo, 4 ex. April; Sinabang, 6 ex. (3 in spirit) January;

Sua Lamatan, 3 ex. April; Lasiching, 3 ex. April; Tanjong Rabang, 1 ex. (in spirit) March.

Pulau Babi, 18 ex. April.

Shell depressed, smooth, of about 6 whorls. Narrowly perforate, aperture nearly vertical, lunulate. Horn-coloured, rather glossy; five of the specimens, from Pulau Babi, differ from the rest in being almost white in colour.

The spirit specimens are unfortunately all quite immature, and I have been unable to make out anything of the structure of the reproductive apparatus, beyond the fact that I could not find any trace of an amatorial organ. This may of course be due to the immaturity of the individuals examined.

So far as it is possible to examine them the shell lobes are similar to those of *Tanychlamys*.

The jaw has a slight central projection. The radula has 97 transverse rows of teeth; its formula is 56-1-56.

Measurements:

shell:	height 14 mm,	breadth 25 mm;
aperture:	height 8.5 mm,	breadth 12 mm.

The generic determination is uncertain, the shells resemble not only those of *Tanychlamys* spp., but are also very like shells of the Malayo-Burmese genus *Sarika*. They are too like those of the Bornean *Everettia*, but this genus is characterised, amongst other features, by the distinctive coloration of the body of the animal, whilst in the present species the colouring is uniform dull gray-black.

The species referred to *Macrochlamys* (now *Tanychlamys*) from Enggano Is. are quite distinct.

Hemiplecta simalurensis nov. spec. (fig. 2*c*)

Simalur, 33 ex.: from primary forest (without exact locality), 2 ex.; Sinabang, 6 ex.; Labuan Batjan, 6 ex.; Sua Lamatan, 8 ex. (among which the holotype); Lasiching, 11 ex. All taken in April.

Shell rather pyramidal, of about 6½ whorls, perforate, umbilicus about 2 mm across. Aperture lunulate, peristome a little thickened, white, slightly reflected over the umbilicus. Suture moderately impressed. Surface with fine spiral and radial striae, showing some corrugation when seen under a lens.

Colour pale cinnamon-brown above, passing to yellowish near the umbilicus. Immature shells with the periphery a little angled, this angling disappears on the last whorl of the adult.

The Simalur shell bears a superficial resemblance to the Andamese

Haughtonia conferta (Pfeiffer), but differs in sculpture and in the characters of the peristome. Conchologically *simalurensis* is certainly a *Hemiplecta.*

Measurements:

Holotype:	shell:	height 28 mm,	breadth 36 mm;
	aperture:	height 17 mm,	breadth 23 mm.

This species had been named provisionally *H. densa* (Adams & Reeve, 1850) by C. A. van der Willigen. It seems to me quite distinct from any examples of that species that I have seen, and also from the figures given by von Martens (1867 [1])).

Jutting (1950) and Rensch (1934) regard specimens described as *densa* from Java as forms of *humphreysiana,* which does not, so far as I know, occur in Borneo, where it is replaced by *densa.*

Hemiplecta humphreysiana (Lea, 1840) subsp.

Simalur, 3 ex.: Sibigo, 2 ex. September; Sinabang, 1 ex. May.

Pulau Babi, many specimens in all stages of growth from breadth 12 mm onward.

Ground colour pale, primrose yellow, with a spiral peripheral band of rich brown colour, about 2 mm in depth, contrasting strongly with the ground.

Rolle (1908) has named a race of *humphreysiana* from Nias Is. as *niasensis* and this seems quite distinguishable from the Simalur-Babi form. An example of Rolle's race before me (e Fulton) is dull brownish-yellow, and lacks the peripheral band. Relatively the umbilicus is perceptibly wider than it is in the Simalur form.

Degner (1928) has recorded *humphreysiana* from the Mentawi Is.

I believe that this widely distributed species will prove to include a number of distinct local races when adequately studied.

Measurements:

shell:	height 30 mm,	breadth 42 mm;
aperture:	height 18 mm,	breadth 24 mm.

Xesta? spec. (figs. 1*c*, 2*b*)

Simalur, 10 ex.: Sinabang, 5 ex. (3 in spirit) February; Air Dingin, 2 ex. May; Lasiching, 3 ex. April.

Pulau Babi, 9 ex. April.

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1) It is unfortunate that the numbering of the figures illustrating this genus on von Martens's plate, Taf. 10, is incorrect. Figures 1, 2 are of *densa,* figs. 3, 4, 6 refer to forms of *humphreysiana,* whilst fig. 5 is of his species *rugata.*

Shell lenticular, of about 5 whorls. Glassy, whitish-yellow, with a narrow (1.5 mm) band of brown at the periphery, which is shouldered. Umbilicus minutely perforate; aperture lunate, almost vertical. Suture slightly impressed.

Measurements:

shell:	height 10.5 mm,	breadth 15.5 mm;
aperture:	height 6 mm,	breadth 9 mm.

The spirit specimens of this species are also quite immature, and I regret I have not been able to make a generic determination. Dissection was difficult, I was able to make out a coiled epiphallus passing into a long narrow penis. No amatorial organ was detected.

The radula with 116 transverse rows has the formula 63-1-63. It does not suggest any relationship with the Durgellinae. In texture the shell is not unlike that of *thisbe* from Borneo referred to the genus *Xesta* by Smith (1895), but is more depressed than is his species.

It is possibly related to *"Macrochlamys" mentaweiensis* Degner, but certainly is specifically distinct.

Helicarion hyaleus (Bock, 1881) (fig. 1*d*)

Simalur, 14 ex. (spirit specimens): without exact locality, 2 ex. (semi-adult) June; Sibigo, 2 ex. August; Sinabang, 7 ex. (all juv.) January, 1 ex. June; Lasiching, 2 ex. (immature) March.

Shell feebly calcified, of about 2½ whorls, flattened above. Aperture very oblique, rather spoon-like. Colour chestnut-brown, a little lighter at the apex. Height of fully adult shell 13 mm, breadth 20 mm.

Bady dull grey-brown. In one adult the lineolae of the foot are marked with regular, black lines running downwards and backwards as fine streaks. The body is not retracted into the shell. The mantle lobes are similar to those figured by Wiegmann (1894) for *adolfi* Boettger (= *albellus* Martens).

The foot is laterally compressed, and with a dorsal keel. It is long and narrow, about 42 mm in length, 10 mm in height, and its maximum breadth is about 6 mm. At the tail the keel overhangs the small tail-gland, but there is no definite caudal "horn". The foot-sole does not appear to be tripartite.

The radula has a large number of lateral teeth, the outermost of these are simple bicuspids. The formula is ca. 400-1-400 teeth in about 159 rows. The length of the radula is 6.7 mm, its breadth 6.1 mm.

The structure of the terminal parts of the reproductive apparatus is very similar to that figured by Burrington Baker (1941, pl. 47 fig. 5) for *leucospira* (Pfeiffer). In the specimen I examined I found a retort-shaped sper-

matophore, about 10 mm in length, ending in a very narrow, tapering tube, without armament.

H. hyaleus was first recorded from Sumatra, and Jutting (1935) lists it for Nias Is.

Planispira quadrivolvis (von Martens, 1865)
Simalur, Sibigo, 1 ex. September.
Recorded from Borneo and Sumatra.

Amphidromus webbi simalurensis Laidlaw, 1954
Simalur (see Laidlaw, 1954, p. 78).

Amphidromus webbi babiensis Laidlaw, 1954
Pulau Babi(see Laidlaw, 1954, p. 76).

Syndromus sumatranus jacobsoni (Laidlaw, 1954)
Simalur (see Laidlaw, 1954, p. 80).

Leaving out of account the estuarine species *Assiminea javana* the list shows a total of 24 forms, distinct species or distinguishable races, collected on Simalur (including Pulau Lekon, a small island near the S. coast of Simalur) and on the satellite island Pulau Babi.

Excluding the two species whose generic position is undetermined the following appear to be endemic to one or both of the islands:

Cyclophorus schepmani,	Simalur;
Cyclohelix crocatus jacobsoni,	Simalur and Pulau Babi;
Cyclohelix kibleri simalurensis,	Simalur;
Cyclohelix kibleri babiensis,	Pulau Babi;
Pupina degneri,	Simalur;
Pseudonenia jacobsoni,	Simalur;
Hemiplecta simalurensis,	Simalur;
Amphidromus webbi simalurensis,	Simalur;
Amphidromus webbi babiensis	Pulau Babi.

Of these endemic species or races the forms attributed to the genus *Cyclohelix* indicate a relationship to the Nicobar and Andaman fauna, and to them may be added the species which are identical with forms from those islands:

Sulfurina behniana (recorded also for Nias Is.),
Sulfurina bensoni,
Cyclohelix nicobarica,
Taphrospira sp. (probably *bathycharax*).

For the rest races of *Amphidromus webbi* and of *Syndromus sumatranus* occur on Nias island, which shares too *Leptopoma niasense, Theobaldius dautzenbergi, Trochomorpha crassicarinata,* and *Tr. niasensis* with Simalur. A race of *Amphidromus webbi* is found also on the Mentawi Is. Definitely Sumatran forms are:

Helicarion hyaleus (also on Nias Is.),
Hemiplecta humphreysiana (also on Nias Is., race?),
Planispira quadrivolvis, and of course the typical race of
Syndromus sumatranus, whilst
Subulina octona is distributed very widely.

Lastly *Cyclophorus schepmani* is almost certainly related to Sumatran forms, *Pupina degneri* seems to be nearer the Nicobar species than to Sumatran forms, whilst both *Hemiplecta simalurensis* and *Pseudonenia jacobsoni* stand as rather isolated species, belonging to genera which are characteristically Malaysian.

The occurrence of distinguishable races of the same species on each of the islands Simalur and Pulau Babi is parallelled in other groups represented in their faunas, for example in the mammals (Chasen, 1940).

A negative character of interest is the absence of the typical Malaysian species *Amphidromus perversus* and *inversus,* which are otherwise found almost universally over "Sundaland". Another curious point is the absence from all the West Sumatran chain (and from Sumatra itself) of *Syndromus furcillatus,* represented by a race in the Andamans and Nicobars (*andamanicus*) and by the type race in Java, with a gap in its distribution of approximately a thousand miles.

To sum up — the fauna listed above shows an element of Malaysian affinities; secondly an element which it shares with Sumatra as one would expect; thirdly one which gives evidence of relationship with Nias Is. and the Mentawi islands. And lastly a small number of species and races, mostly found amongst the operculate species, which suggest relationship with the Nicobar and Andaman fauna. This relationship is more marked in Simalur than it is in Nias Is. or further South. Chasen's comment (loc. cit.) is worth quoting: "The islands of the West Sumatran chain are of special interest, they contain many well-marked forms. In their faunas these islands vary much among themselves, and sometimes from Sumatra.... The archipelago cannot be treated as an entity, ...".

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