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The Identity of Halys versicolor HERRICH-SCHÄFFER, 1840

(Heteroptera, Pentatomidae)

With 10 Figures

M. S. K. GHAURI

London

Abstract. Based on the type specimen of *Halys latipes* WESTWOOD and several other types and other specimens from the Hope Department, Oxford, Rijksmuseum van Natuurlijke Historie, Leiden, Muséum National d'Histoire Naturelle, Paris, and British Museum (Natural History), London the position of *Dalpada versicolor* (HERRICH-SCHÄFFER), a pest of coffee in Java, has been clarified. A neotype for *H. versicolor* H.-S., 1840, has been designated, the name has been synonymised in favour of *H. latipes* WESTWOOD, 1837, the species has been redescribed and illustrated under a new subgenus which is compared with the typical *Dalpada*.

Introduction

In this paper, the eighth in the series on *Dalpada* complex, the identity, the synonymy, and the subgeneric position of *Halys versicolor* HERRICH-SCHÄFFER is resolved.

The name *Dalpada versicolor* (HERRICH-SCHÄFFER) has been in usage since 1851 (DALLAS, 1851; DISTANT, 1902; KONINGSBERGER, 1903). HERRICH-SCHÄFFER described it from Java in 1840, as *Halys versicolor*. Although, in the literature, no synonymy was involved with this name, several specimens were misidentified with and wrongly named as *Dalpada versicolor* (HERRICH-SCHÄFFER). These specimens originated in North as well as South India (DISTANT, 1902). Even in the KIRKALDY's catalogue (1909) India appeared as the habitat of this species, in addition to its original locality, Java. KONINGSBERGER (1903) recorded it as a pest of coffee in East Java. The wrongly named specimens from India and Nepal have been described as *Cahara chaubattia* GHAURI, 1978, *Cahara metallica* GHAURI, 1978, *Tipulparra pseudoversicolor* GHAURI, 1980, *Tipulparra brevisa* GHAURI, 1980, and *Meridindia salmana* GHAURI, 1982.

The discovery that the so-called *Dalpada versicolor* specimens actually belonged to different genera and species and that the true *D. versicolor* (H.-S.) is a coffee pest, made it urgent to determine its true identity. As a rule, this should be based on the study of its type specimen. In the case of *Halys versicolor* H.-S. it is even more relevant because of the ambiguity of its original description. This, as given below with its English translation, with mine italics, is applicable to several species of the *Dalpada* species complex.

„*Halys versicolor*
H. flavofusca aereo variegata, maculis binis ad basin scutelli et abdominis margine subminiaceis, capite elongato, oculis magnis, pedibus longis.
Das Mittelstück des langen Kopfes überragt die seitlichen, welche auswärts zwei stumpfe Ecken bilden. Seiten des Thorax nach vorne schwach sägezähnig, *die Ecken spitzwinkelig*. Die Spitze des Schildchens lang und schmal; die Membran mit acht

Adern, die äußerste jeder Seite undeutlicher; die langen Beine schwach behaart; die Fühler sehr dünn (Glied vier und fünf fehlen bei meinem Exemplar); Farbe ockergelb, die Hohlpunkte ungleich vertheilt, am orangen Bauchrand feiner und nicht dunkel ausgefüllt, lassen zwei orange Flecken an der Wurzel des Schildchens glatt. Die Flecken der Oberfläche und des Bauchrandes stahlgrün. Unterseite bleich orange, mit grün bestaubtem Außenrande, und schwarzem Längsfleck vor dem After.
Aus Java, von Herrn Sturm."

„*Halys versicolor*
Flavescens, variegated, at base of scutellum with two spots, connexiva with reddish markings, head elongate, eyes large, legs long.
The middle lobe of the head extends beyond the lateral lobes which are developed outwards to form two obtuse angles. The sides of the pronotum weakly serrated anteriorly, *humeral angles acute-angled.* The apex of the scutellum long and narrow; the membrane with eight veins, the outermost on each side indistinct; the long legs faintly hairy; the antennae very slender (segments four and five missing from my specimen); colour yellow ochre, the punctures unevenly distributed, with the orange-coloured border of the abdomen delicate and not darkened, leaving two smooth orange patches at the base of the scutellum. The marks on the upper surface and the borders of the abdomen steel-green. Underside pale orange with green dusting on the outer borders, and dark longitudinal marks anterior to the anus.
From Java, from Mr. Sturm."

The description is accompanied by a beautiful colour-painting (HERRICH-SCHÄFFER, 1840, Fig. 520) with which, so far, no Javan specimen could be identified. This painting shows that the specimen had *smooth humeral angles* (shoulders), *not produced into horny processes.* It is suspected that either the painting is based on a specimen other than a Javan one, or that the artist has not been careful when drawing the humeral angle of the pronotum. The former possibility is more probable – i. e., an Indian specimen was the model for this figure. This suspicion is strengthened by the fact that several Indian „*Dalpada*" specimens were identified by more than one person, as *D. versicolor* (H.-S.) *(vide supra).*

A series of 15 specimens from Leiden Museum, another of 10 specimens from Paris Museum and 8 specimens in the BM (NH), London, all originating from Java, seem to belong to this species.

Long drawn-out correspondence during the last more than ten years with various Museums in Europe where the existence of the type of *Halys versicolor* H.-S. was suspected yielded negative results. Dr. H. WUNDT of the Zoologische Sammlung des Bayerischen Staates, München, FRG, and Dr. U. GÖLLNER-SCHEIDING of Zoologisches Museum, Museum für Naturkunde der Humboldt-Universität, Berlin, DDR, informed the writer (personal communication) that the type of *H. versicolor* H.-S. does not exist in their respective museums. Dr. WUNDT also remarked that part of the collection was burnt during the last war and it is assumed now that the type was then lost.

As there is little certainty about the existence of HERRICH-SCHÄFFER's type, to smooth the path of taxonomy, the designation of a neotype of *Halys versicolor* H.-S. has become inevitable; the specimen to be designated as neotype should originate from the type locality, i. e., Java. This topotypic specimen should also agree, as closely as could be, with the original description and if possible with the combination of the original description and the painting.

Meanwhile, a study of the ♂ type of *Halys latipes* WESTWOOD, 1837, which was described from Java, showed that it is the same as the above mentioned series of specimens from Leiden, Paris and London. At the moment *Halys latipes* WESTWOOD, together with *Halys concinna* WESTWOOD, 1837, *Dalpada bulbifera* WALKER, 1867, and *Dalpada consobrina* WALKER, 1867, are considered as synonyms of *Dalpada clavata*

(FABRICIUS) described as *Cimex clavatus* FABRICIUS, 1798, by DISTANT (1902). Earlier, DALLAS (1851) considered *Halys concinna* WESTWOOD, 1837, as a synonym of *Cimex clavatus* FABRICIUS, 1798, and later KIRKALDY (1909) suppressed *Cimex clavatus* FABRICIUS, 1798, as a junior homonym of *Cimex clavatus* REICH, 1795, and used the next available name, *Halys concinna* WESTWOOD, 1837, putting *Halys latipes* WESTWOOD, 1837, *Dalpada bulbifera* WALKER, 1867, *Dalpada consobrina* WALKER, 1867, in the synonymy, much as was done earlier by DISTANT (1902). Needless to say, all this confusion is being sorted out now. *Halys concinna* WESTWOOD has already been shown to be distinct (GHAURI, 1982), and during the present study it is seen that *Halys latipes* WESTWOOD is quite different from the former. The other names such as *Dalpada bulbifera* WALKER and *D. consobrina* WALKER in this confusion are either junior to *H. latipes* WESTWOOD or junior homonyms, e. g. *Cimex clavatus* FABRICIUS, 1798, and therefore do not affect the status of *H. latipes* WESTWOOD. Here it is not out of place to mention that *Cimex clavatus* FABRICIUS, 1798, in addition to being a junior homonym of *Cimex clavatus* REICH, 1795, is also in the same position with regard to *Cimex clavatus* THUNBERG, 1783, and *Cimex clavatus* LINNAEUS, 1767

Halys latipes WESTWOOD, on the basis of external as well as internal ♂ and ♀ genitalia, does not fit in any existing genus, although it comes very close to *Dalpada sensu stricto*. From the latter it differs mainly in not much dilated fore tibia, shape of ♂ pygophore, paramere and female spermatheca. *Halys latipes* WESTWOOD is placed in a new subgenus *Medenipa* which is defined as follows:

Medenipa subgen. n.

Very similar to *Dalpada sensu stricto* but differing by the almost non-dilated or barely dilated fore tibia and shape of pygophore, paramere, female plates and spermatheca. Surface of body closely punctate, dull except for a few spaces.

Head, tylus and juga of equal length at apex, latter gently sinuate, outer lobe at right angle forming a definite, though short corner, tooth in front of eyes absent, rostrum reaching middle of third visible abdominal sternum, antennal segments normal, eyes prominent but not pedunculate; pronotum – lateral margin deeply sinuate, anterior half coarsely toothed and marginate, posterior half only caloused, humeral angles forming short blunt horns gently outwardly raised; scutellum normal, near basal angles luteous, smooth. Prosternum medially shallowly depressed, mesosternum with median crest, metasternum smooth; abdominal sterna – first few medially shallowly depressed. Foretibia narrowly or hardly expanded. Female external plates – first valvifer subtriangular, internal margin straight, postero-internal margin roundish, paratergite 9 elongate, produced medially a little, spermathecal bulb small with small tubules, main tube not swollen, ♂ pygophore posteroventral margin trisinuate (Fig. 4), paramere robust, long, without crenulated area (Figs. 5 + 6) (c. f. Figs. 29 and 15, GHAURI, 1977 and 1980, respectively).

Type species *Halys latipes* WESTWOOD, 1837.

Comments

The subgeneric name *Medenipa* is dedicated to my friend Mr. Jamil Ahmed MEDENI, a renowned Urdu Poet from my original town Delhi, India, who now lives in London, close to the British Museum (Natural History).

Several specimens of *M. latipes* and other related species from various islands in the Pacific are under investigation. They present even more complex a problem which

needs more time to resolve. The question of the identity of *D. versicolor* (H.-S.) was the most urgent, which is satisfactorily answered now.

Dalpada (Medenipa) latipes (WESTWOOD)

Halys latipes WESTWOOD, 1837 = *Dalpada latipes* (WESTWOOD) auctt.
Halys versicolor HERRICH-SCHÄFFER, 1840 = *Dalpada versicolor* (H.-S.) auctt., **syn. n.**

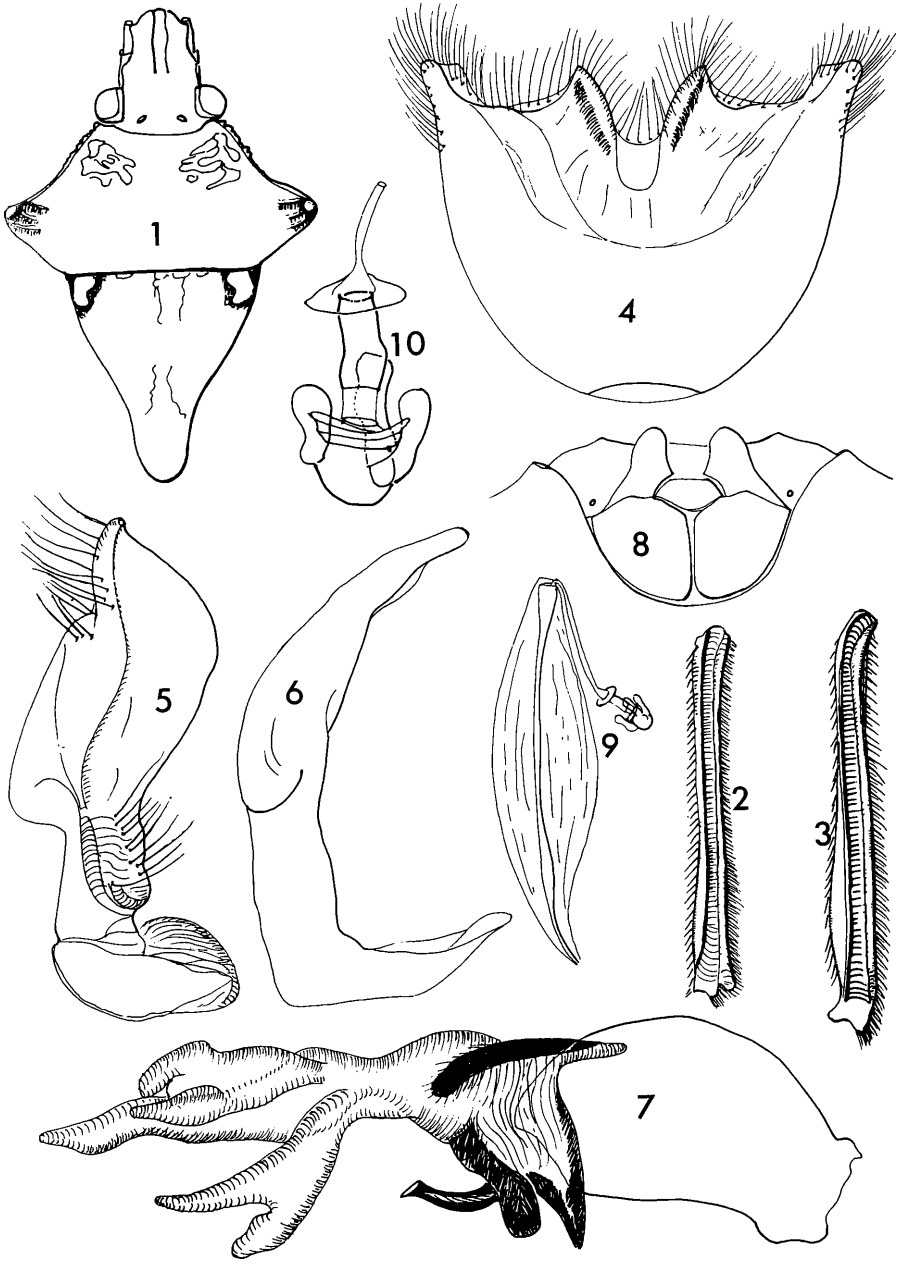
Colour Ochraceous ground colour, with longitudinal streaks on head and pronotum and oblique streaks on scutellum and corium, formed by aggregating black punctures, membrane light smoky, looking black because of dark abdominal dorsum showing through, connexival anterior and posterior margins dark, patches near basal angles of scutellum luteous impunctate; ventral surface of abdomen bright ochraceous, with sublateral fascia and a median mark on pregenital sternum, black; pattern reminiscent of general pattern of *Halys sensu stricto*.

Structure Tylus not or only slightly extended beyond juga, inner lobe of jugum acute, not pointed, external margin of this lobe convex, inner margin straight, outer lobe small, at 135° to inner lobe, tooth in front of eye absent, but lateral margin of head between outer lobe of jugum and usual place of location of tooth concave, eyes prominent, 1st antennal segment of antenna not reaching apex of head, bucculae not very much raised; pronotum – anterior half of lateral margin with teeth, posterior half without teeth but margined, humeral horn prominent and extended laterally and raised, but not vertically; scutellum – near basal angles luteous, smooth; scent gland auricle wide, almost as wide as remaining lateral space of sternum; rostrum reaching base of 4th abdominal sternum (3rd visible); anterior tibia not or very slightly expanded.

♂ Genitalia Pygophore (Fig. 4) posteroventral margin with a deep median emargination, sides of this depression conically produced, lateral to each of these a shallow trough formed by produced lateral angles of pygophore, entire margin provided with long hairy setae; paramere (Figs. 5 + 6) large and well sclerotised, stem short, thumb-like process modified wide somewhat flat surface with thick edge and slender setae, „head" rectangular with a median ridge and pointed apex having a group of fine setae; aedeagus (Fig. 7) – theca well sclerotised, vesica tubular short, thick and gently curved with well-developed vesical appendages, conjunctiva elongate with well sclerotised ventral and dorsal appendages and three membranous appendages, median appendage finger-like, each lateral appendage bifurcated.

♀ Genitalia External plates (Fig. 8) first valvifer triangular, not produced posteriorly, paratergite 9 elongate with inner margin pointedly produced medially; spermatheca – proximal part (nearest to opening) not strongly swollen (like that of *Paranevisanus* DISTANT, *vide* GHAURI, 1975), both pump flanges present, bulb small with three substantially long tubules, duct outside spermathecal bag joining bulb fine.

Material studied Type ♂ of *Halys latipes* WESTWOOD with the following labels, „Type, Westw. (Hope), C. Hemipt. 1837 Part 1, page 23, Distant, P.Z.S. 1900, p. 807–825", „circular red margined Type label", „Java", „*latipes* Hope", „*Dalpada clavata* Fabr." „Type HEM: NO. 97 1/2, *Halys latipes* Westwood, Hope Dept. Oxford", designated here as lectotype, ♀ with the following labels, „Java", „Type HEM: NO. 97 2/2, *Halys latipes* Westwood, Hope Dept. Oxford", designated here as paralectotype, in Hope Department, Oxford. Java, 800 m, 31. VII. 1926 (L. G. E. KALSHOVEN), Gn. Papandujan, NO. 533, ♂ designated here as neotype of *Halys versicolor* HERRICH-SCHÄFFER. Paraneotypes Op mahonie, Kedoengdjati, XII. 1920 (Dr. KALSHOVEN), a 22, 1 ♀; Op grbl. mahonie, Semarang, VI. 21 (Dr. KALSHOVEN), c 120,



Figs. 1–10. *Dalpada (Medenipa) latipes* (WESTWOOD)
1 Head and thorax, dorsal view (based on neotype ♂ of *Halys versicolor* HERRICH-SCHÄFFER) – 2: foretibia of the same – 3: foretibia of ♀ paraneotype of *H. versicolor* H.-S. – 4: pygophore, posterior view (based on ♂ type of *Halys latipes* WESTWOOD) – 5 + 6: two views of paramere of the same – 7: aedeagus of the same – 8: ♀ plates (based on „Para"type ♀ of *H. latipes* WESTWOOD) – 9: spermatheca (based on paraneotype of *H. versicolor* (H.-S.) – 10: bulb of the same.

1 ♂; Java, M, 193 (193 .) (Leg. L. KALSHOVEN), NO. m 546, 1 ♂; NO. m 506, 1 ♂; NO. m 515, 1 ♂; Java, M, 192 (192. .) (L. G. E. KALSHOVEN), NO. c 460, 1 ♀; Java, Semarang, Teak Forest, 30. I. 1923 (L. G. E. KALSHOVEN), NO. m 422, 1 ♀; 20. V 1926, NO. 376, other data same as previous ♀, 1 ♀; 21. II. 1923, NO. w 109, other data same as previous ♀, 1 ♀; 19. VII. 1922, NO. c 391, other data same as previous ♀, 1 ♀; 4. VI. 1924, Gedangan 4. 6. 24, other data same as previous ♀, 1 ♀; Djawa, Karmon, V 1926 (DAMMERMAN), 2 ♀♀; Doplang, Remlang, 6. I. 25, (Fr. A. Th. H. VERBEEK), 1 ♀; these 15 specimens in Rijksmuseum van Natuurlijke Historie, Leiden. Java, Mont Gedem (J. B. LEDRU) 1898, (R. OBERTHUR), Muséum National d'Histoire Naturelle, Paris, 1 ♀; Tjibogo – Paeanger, other data same as previous ♀, 1 ♀ 1 ♂; Java Occident, Sukabumi, 2000, 1893 (H. FRUHSTORFER), Museum Paris coll. NOULAHIER, 1898, 1 ♀; Pengalengan, 4000, other data same as previous ♀, 2 ♀♀; Java, 1880 (PLOEM), Muséum National d'Histoire Naturelle, Paris, 1 ♀; Java, Soekaboemie, 1908 (E. CORDIER), coll. Cresse de Béarn, Croisiere du „Nirvana", Muséum National d'Histoire Naturelle, Paris, Cresse de Béarn 1909, *Dalpada* sp. WE-1 Yang Det. 1934, 1 ♀; Duvaucel et Diard (no other data), 1 ♀; 249, 36 (no other data), 1 ♀. – All in Muséum National d'Histoire Naturelle, Paris.

Java, Horsfield, 60.15 E.I.C. 1 ♂, 3 ♀♀; Java Occident., Pengalengan, 4000, 1893 (H. FRUHSTORFER), Museum Paris coll. NOULAHIER 1898, 1 ♂ (7); Java, Preanger, N.O.I. Bandoeng, 750 m, 24. XII. 1937 (coll. F.C. DRESCHER), Brit. Mus. 1938–437, BM FCD 226 1 ♀; Java, Zuid-Kust, Babakan 10 ms, 7. XI. 1937 (K. BENNET), Brit. Mus. 1938–437, BM FCD 226, 1 ♀; Java, Preanger, 4,000–5,000 Voet, IV, 1937 (F.C. DRESCHER, G. TONHOEBAN, Prahoe), Brit. Mus. 1938–437, BM FCD 226, 1 ♀; these 8 specimens in BM (NH), London.

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Address of the author:

M. S. K. Ghauri, Commonwealth Institute of Entomology,

56 Queen's Gate, London SW7 5JR; England (UK)