

Two new species of parasites from wax scale *Ceroplastes* sp.  
and a new genus and species from *Saccharicoccus sacchari*  
(Ckll.) of potential importance from India  
(Hymenoptera: Encyrtidae)

B. R. SUBBA RAO, F.A.Sc.

Commonwealth Institute of Entomology, C/o British Museum (Natural History),  
Cromwell Road, London SW7 5BD

MS received 30 August 1976

#### INTRODUCTION

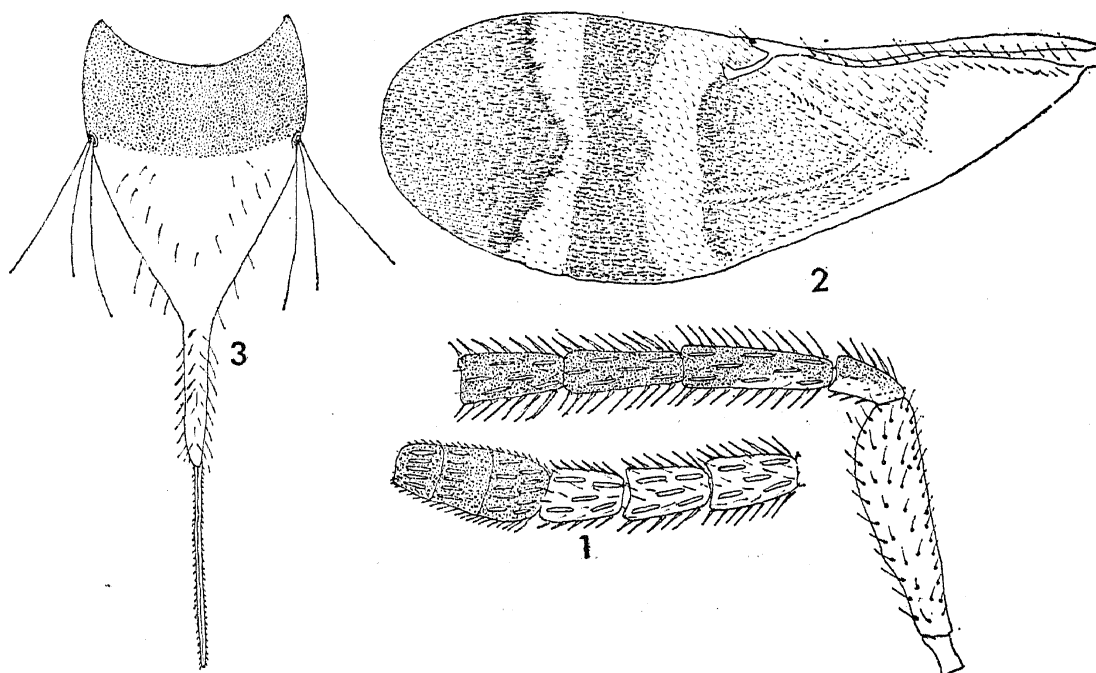
RECENTLY the Commonwealth Institute of Biological Control, Bangalore and the Institute of Sugarcane Research, Lucknow, reared some parasites belonging to the family Encyrtidae and submitted for determination. The CIBC material consisted of two species of parasites unique in having very long ovipositors reared from the wax scale *Ceroplastes* sp. The Institute of Sugarcane Research material consisted of a species reared from the sugarcane mealy bug *Saccharicoccus sacchari* that could not be placed under any known genus. As these species are probably of potential importance in the biological control of scales, they are being described in this paper.

*Microterys indicus* SP. NOV.

Female: length 3.2 to 3.5 mm including the ovipositor.

Head and body completely orange-brown except the following areas which are dark brown with purple metallic reflections: axillae, scutellum, propodeum and basal two-thirds of abdomen. Antennae with scape concolorous with head, pedicel and first funicle segment somewhat paler ventrally, otherwise pedicel and first three funicle segments and club dark brown, funicle segments four to six pale white. All coxae slightly darker than body and the rest of legs concolorous. Forewings with two hyaline cross bands beyond venation, hindwings hyaline.

Head with fronto-vertex very narrow, one-sixth to seventh of head width at median ocellus, ocelli large, in a very acute angled triangle, lateral pair touching the ocular borders, interocellar distance less than their own diameter.



Figures 1-3. *Microterys indicus* sp. nov. ♀. 1. Antenna; 2. Forewing; 3. Abdomen.

Antennal sockets with their upper margins well below lower ocular line, separated from each other by 1.5 to 1.7 times their own length and from clypeal margin by less than their own length. Scrobes broad, shallow, their lateral margins not angled, interscrobial prominence rounded. Antennae very long, scape expanded ventrally in the distal two-thirds, 3.3 times as long as broad, pedicel short, less than one-fourth the scape, all funicle segments longer than broad and decrease in length progressively, apical segments and the club not appreciably wider than basal funicle segments, club shorter than the combined lengths of the last two funicle segments (35:39), truncate at apex. Sculpture of fronto-vertex cellulate-reticulate without conspicuous punctations.

Thorax with mesoscutum clearly wider than long (34:24), scutellum slightly wider than long (21:19), mesoscutum densely setose with approximately 120 setae, scutellum with about 32 setae, one pair of setae very long and originating about two-thirds the distal end and a pair of long setae at the distal end. Middle tibial spur slightly longer than basi-tarsus (32:29).

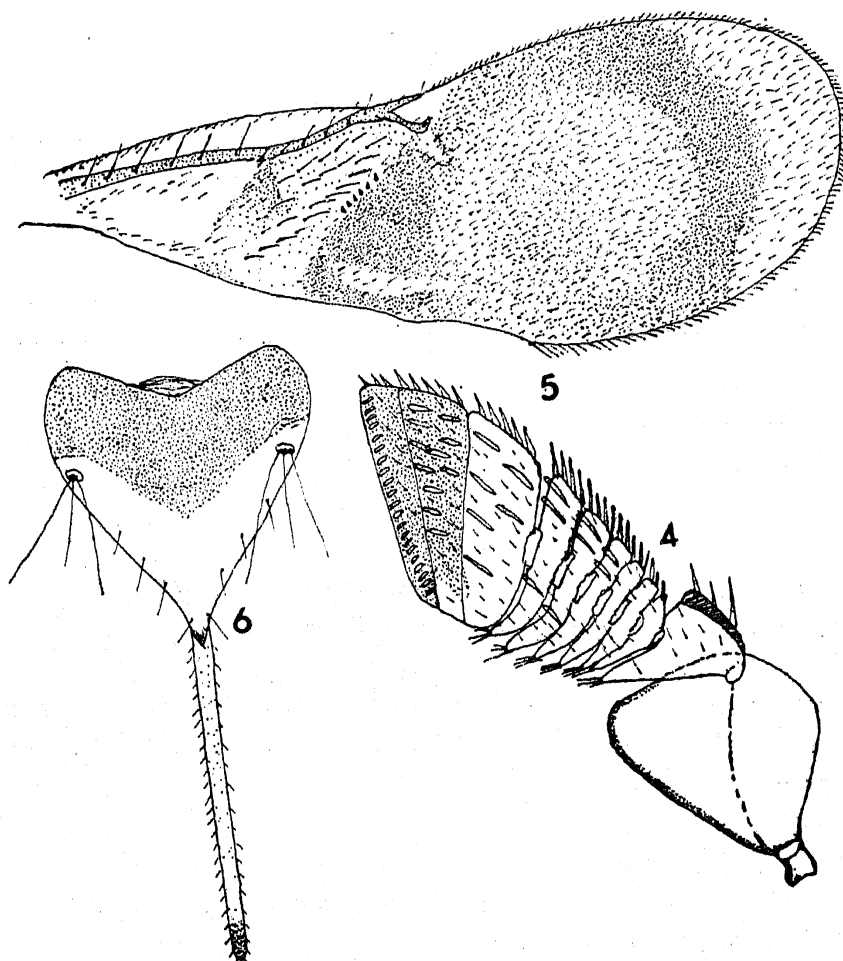
Forewings as in figure 3, about one-third as broad as long (35:100); marginal vein long, slightly shorter than stigmal vein, postmarginal vein much shorter than stigmal vein; hindwings uniformly and densely setose except for a very short bare basal patch.

Abdomen narrower than thorax, almost triangular, much longer than thorax (76: 50); ovipositor very long and slender; in cleared slide mounted specimens the base reaching the base of the abdomen and protruding strongly caudally.

Male not known.

Material studied. Holotype ♀ India, Karnataka State, Mysore ex *Cero-plastes* sp. on *Ficus glomerata*, November, 1975 (CIBC, Bangalore), paratypes 10 ♀ same data. 1 ♀ Bangalore ex giant *Cero-plastes* sp. 10-2-1962 (CIBC, Bangalore). Holotype and paratypes deposited in the British Museum (Nat. Hist.).

*Microterys indicus* sp. nov. is very near to *M. australicus* Prinsloo<sup>1</sup> but differs from the Australian species in the colouration of thorax and abdomen, in the measurements of the antennal components and the extremely exserted ovipositor sheaths.



Figures 4-6. *Anicetus stylatus* sp. nov. ♀. 4. Antenna; 5. Forewing; 6. Abdomen.

*Anectus stylatus* SP. NOV.

This species belongs to *ceroplastis* Ishii group (Annecke<sup>2</sup>) that include *dodonia* Ferriere, *beneficus* Ishii and Yasumatsu, *ohgiishi* Tachikawa, *communis* Annecke and the very recently described *aligarhensis*, *angustus* and *howardi* by Hayat, Alam and Agarwal<sup>3</sup> from India.

Female: length 2.25 to 2.3 mm including the ovipositor.

General colour yellowish brown with dark brown and orange admixtures. Fronto-vertex orange with strong purple metallic reflections on the frontal ledge; face with a dark brown band between antennal sockets across interscrobal prominence extending back on each side of the cheeks; face straw coloured, eyes black, ocelli brown; scape of antenna with ventral margin narrowly dark brown, second and third joints of club dark brown, rest of antenna yellowish brown. Thorax entirely dark orange brown except metanotum and propodeum which are dark brown; abdomen dark brown in the basal half; ovipositor sheaths orange except for the dark brown tip. Legs concolorous with body except the hind tibiae which have a pair of dark brown rings.

Head with eyes large, nearly touching the fronto-facial carina, a little over six times as wide as the fronto-vertex at median ocellus; ocelli in an acute angled triangle, the lateral ocelli almost touching the ocular borders, Antenna as in figure 4, club longer than funicle (20:15) clearly 3-jointed, rhinaria present on funicle segments 3-6 and on all club joints, the apical joint with a row of small rhinaria arranged dorso-ventrally; antenna densely setose.

Thorax as in *dodonia* Ferriere. Middle tibial spur half as long as the basi tarsus. Forewing with the submarginal slender; marginal, postmarginal and stigmal veins subequal, stigmal vein only just longer than postmarginal vein; basal triangle of forewing with a row of setae almost parallel to the submarginal vein and the lower border; discal setae beyond venation fine, marginal cilia short. Forewing with patches of infumation as in figure 5.

Abdomen heart-shaped, pointed at apex, cercal plates nearer the base of abdomen. Ovipositor sheaths exerted very long, more than the length of the abdomen.

Male not known.

Material studied. 2 ♀ including the holotype and paratype. India, Karnataka State, Mysore ex *Ceroplastis* sp. on *Ficus* sp. April, 1976 (CIBC, Bangalore). Types deposited in the British Museum (Nat. Hist.)

*Anecitus stylatus* sp. nov. differs from all other known species of *cero-plastis* group in possessing an unusually long ovipositor which is exerted longer than the length of the abdomen.

*Cladiscodes* gen. nov. apparently belongs to tribe Rhinoencyrtini, subtribe Rhinoencyrtina Hoffer as defined by Trjapitzin<sup>4</sup> that include *Rhinoencyrtus* Mercet, *Metaphaenodiscus* Mercet, *Monodiscodes* Hoffer, *Tetrarhopala* Motschulsky, *Tetralophidea* Ashmead and *Neocharitopus* Hayat-Alam and Agarwal. The new genus described in this paper may be separated from other above-mentioned genera by the following key characters.

*Key to genera of subtribe Rhinoencyrtina Hoffer. ♀♂*

1. Head with unusual protruberance between antennae. Male antennae without rami. Marginal vein punctiform; postmarginal and stigmal veins short ..... *Rhinoencyrtus* Mercet.  
(Southern Europe)
- Head without unusual protruberances between antennae. Male antennae with rami where males are known. Venation well developed ..... 2
2. Mandibles 3-dentate. Forewing slightly notched basal to marginal vein and strongly infumate basally. Male antenna with 4 thin rami on funicle segments 2-5. .... *Cladiscodes* gen. nov.  
(India)
- Mandibles 2-dentate. Forewings not notched basal to marginal vein and hyaline to dusky. .... 3
3. Frons and vertex with deep coarse pits ..... 4
- Frons and vertex without deep and coarse pits ..... 5
4. Wings entirely fumose. Scutellum as coarsely punctate as vertex. Club of antenna large and strongly truncate. Male not known  
..... *Metaphaenodiscus* Mercet.  
(Spain)
- Wings fumose only in their basal third. Funicle segments as broad as the club; club not truncate at apex. Male antenna with rami on funicle segments 2-5. .... *Monodiscodes* Hoffer  
(Europe)

5. Male not known. Female not recovered since Motschulsky's description, very difficult to recognise from original description  
 ..... *Tetrarhopala* Motschulsky  
 (Sri Lanka)
- Male known ..... 6
6. Club of antenna of female very strongly obliquely truncate. Stigmal vein strongly expanded at apex. Sixth funicle segment of male antenna one- and one half times as long as the basal part of the fifth segment ..... *Tetralophidea* Ashmead  
 (U.S.A., Europe)
- Club of antenna not obliquely truncate. Wings hyaline. In male stigmal vein moderately expanded at apex. The sixth funicle segment nearly as long as the basal part of fifth funicle segment  
 ..... *Neocharitopus* Hayat, Alam and Agarwal.  
 (India)

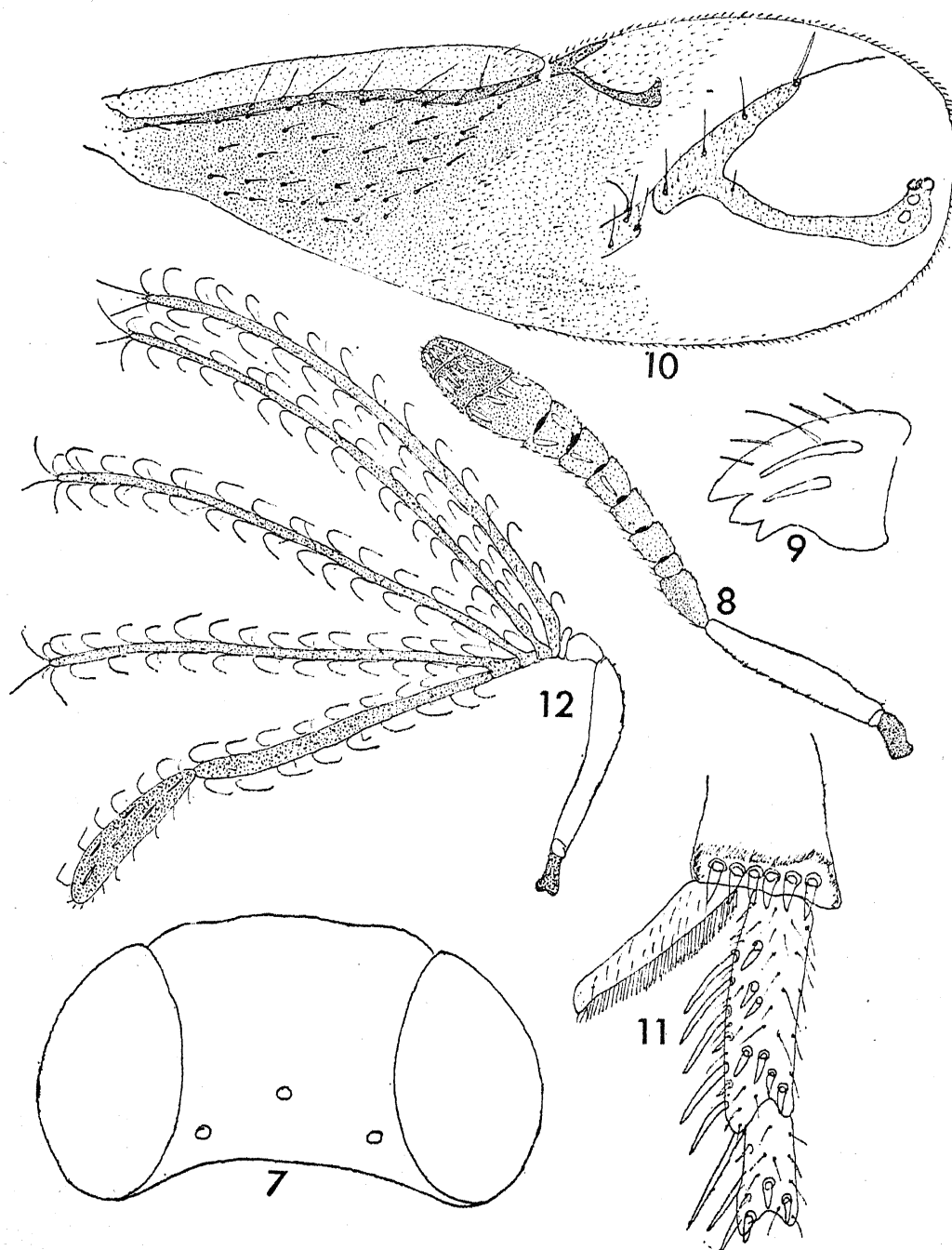
*Cladiscodes* GEN. NOV.

Female: Head broad, lenticular, as in *Discodes* Forster; vertex very broad, nearly one and one-half times as broad as eye width; eyes not over reaching occipital margin; ocelli in an obtuse angled triangle, lateral ocellus a little nearer to ocular margin than to occipital margin; scrobe shallow, interscrobal not divided, flat. Antennae inserted close to mouth; scape cylindrical, pedicel, six funicle segments and three-jointed club. Mandibles clearly three-dentate, sharp; maxillary palps four and labial palps three-segmented respectively. Vertex, face and scrobal area with deep round thimble-like pits; malar suture complete and strongly impressed. Axillae almost reduced to a continuous narrow strip. Scutellum large and flat, sculpture similar to head and mesoscutum but with oval shallow pits and longitudinal aciculations.

Forewings narrow, short, basal three-fourths strongly infumate; marginal vein longer than broad, postmarginal vein longer than marginal and stigmal vein longer than the combined lengths of marginal and postmarginal veins. Tibial spur of middle leg slightly shorter than basitarsus.

Abdomen slightly shorter than the length of thorax; ovipositor sheaths very slightly exerted.

Male: Essentially similar to female; vertex nearly three times as broad as the eye width. Antennae with rami; scape, pedicel, a very short first funicle segment, funicle segments two-five with very long thin rami, sixth very long, club solid. Wings hyaline.



Figures 7-12. *Cladiscodes sacchari* gen. nov. sp. nov. 7. Head, dorsal view ♀; 8. Antenna ♀; 9. Mandible ♀; 10. Forewing ♀; 11. Middle tibial spur and basi tarsus ♀; 12. Antenna ♂.

Type-species, *Cladiscodes sacchari* sp. nov.

*Cladiscodes sacchari* SP. NOV.

Female: length 1.9 to 2 mm.

Head black with greenish metallic reflections arising from thimble-like pits; thorax and abdomen black. Eyes grey. Scape except radicle yellowish brown, radicle blackish, pedicel and funicle brown, club brown with the apical areas darker. All coxae, fore femora fully, middle and hind femora in the basal three-fourths dark brown, rest of the legs light brown to testaceous. Forewings strongly infumate only in the basal area.

Occipital margin very sharp, vertex broad, nearly one and one-half times as broad as eye width (32:21), eyes long twice as long as broad, malar space short, shorter than eye length (15:40); ocelli rather small. Antennal scape cylindrical, nearly seven times as long as broad (20:3), pedicel a little less than one-third the length of scape, first funicle segment anelliform, second to fourth quadrate, fifth and sixth broader than long; club as long as the combined lengths of the last four funicle segments.

Thorax more or less like *Discodes* Forster. Scutellum flat, longer than mesoscutum; axillae not clearly demarcated, appears like a narrow strip, but under certain conditions of light and angles axillae appears to be fused with scutellum and could be differentiated by different sculpturing.

Forewings comparatively short, two times as long as broad; basal area with rows of rough setae and the disc with fine setae: marginal vein short, slightly longer than broad, postmarginal vein long, stigmal vein curved and very long. Abdomen shorter than thorax, ovipositor very slightly exerted.

Male: Essentially similar to female except for the following characters:

Lateral ocelli nearer to occiput border than to ocular. Antennae as described under generic characters, sixth funicle segment very long, slightly shorter than the ramus of the fifth segment (40:60), club solid, a little over half as long as the sixth funicle segment (24:40). Wings hyaline; marginal vein nearly as long as the postmarginal, stigmal vein shorter than the combined lengths of marginal and postmarginal veins.

Material studied. Holotype ♀ paratypes 5 ♀ 6 ♂. India, Lucknow ex *Saccharicoccus sacchari* (Ckll.) on sugarcane. July, 1975 (Institute of Sugarcane Research). Types deposited in the British Museum (Nat. Hist.).

#### REFERENCES

1. Prinsloo, G. L., *J. Aust. Entomol. Soc.* **14** 409 (1975).
2. Annecke, D. P., *Trans. R. Entomol. Soc. London* **119** (4) 99 (1967).
3. Hayat, N., Alam, S. M. and Agarwal, M. M., *Aligarh Muslim Univ. Publ. (Zool. Ser.) Ind. Ins. Typ.* **IX** 1 (1975).
4. Trjapitzin, V. A., *Entomol. Rev. (USSR)* **52** 163 (1973).