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Additions and Emendations to the Virginia Fauna of "True Bugs" (Heteroptera: Cydnidae, Scutelleridae, Pentatomidae, Alydidae)

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In two fascicles of "The Insects of Virginia" published some years ago, I provided brief accounts of the pentatomoid (No. 4, 1971) and coreoid bugs (No. 9, 1975) belonging to seven families of the Heteroptera. Since the appearance of those references, substantial collections of these insects have been made throughout the state by myself as well as other individuals, including staff members of various state agencies (in particular, the Virginia Agricultural Extension Service (VPI&SU) and the Division of Natural Heritage, Department of Conservation and Natural Resources), resulting in the addition of several species to the state list. A considerable number of name changes have also occurred during the past two decades, so that a general update of the two fascicles seems desirable.

No. 4: Scutelleroidea

Many new distributional records for pentatomoids were published (Allen & Hoffman, 1975, 1976) in two rather informal journals of the U. S. Department of Agriculture (Cooperative Economic Insect Report, 1975, and Cooperative Plant Pest Report, 1976).

Larivière (1992) has recently proposed the new genus *Parabrochymena* for a number of mostly tropical species, including that treated in 1971 as *Brochymena arborea*. The correct name for this insect is now *Parabrochymena arborea*.

The late R. I. Sailer (in litt., 1972) and numerous authors (e.g., McDonald 1975) established that the generic name *Peribalus*, under which I included the single species *P. limbolarius*, should be replaced by *Holcostethus*. Dr. Sailer also advised that the specific name *Chlorochroa uhleri* should be corrected to *C. persimilis* Horvath.

The pentatomid listed by me (1971) as *Rhytidolomia belfragei* Stal was later (Thomas, 1983) described as a new species, *Chlorochroa dismalia*. This species remains known only from the holotype and a second specimen, also from the Dismal Swamp, in the Louisiana State University collection.

A revision of the pentatomid subfamily Asopinae by Thomas (1992) introduced several name changes for Virginia species. The genus *Apateticus* was divided into two, with the name *Apoecilus* revived for several species including our *A. cynicus* (Say). Thomas also pointed out that the name *modesta* Dallas, 1851, was a junior synonym of *Podisus maculiventris* (Say) and not applicable to the species to which previously applied; the latter was given the new name *Podisus brevispinus*. Lastly, he showed that the species hitherto known as *P. fretus* Olsen should correctly be called *P. neglectus* (Westwood).

During this time, one addition was made to the state's fauna of scutelleroids, with the description of what I (1971: 15) discussed as a color variant of *Corimelaena lateralis* (Fabricius) as a new species, *C. obscurus*, by McPherson & Sailer in 1978. Several others may now be accounted.

Scutelleridae

Diolcus chrysorrhoeus (Fabricius). In 1971 I stated "Recorded by Brimley (1938: 60) from Cape Hatteras, N. C., and thus very likely to be discovered in extreme southeastern Virginia." Among material obtained by VMNH from the University of Richmond insect collection are four specimens of this species from Cape Hatteras, North Carolina, and one labeled "Chesterfield Co./M. Williams/11-XII-1937". Perhaps this record should be held in abeyance pending confirmation by the discovery of additional specimen. Chesterfield County is somewhat more inland than one would expect from the otherwise sublittoral northern range of the species, which, furthermore, has not been found elsewhere in southeastern Virginia despite intensive collection in the Virginia Beach area. Also, M. Williams collected one of the Cape Hatteras specimens (which his pin label attributed to "S.C."). Dr. A. G. Wheeler suggests the additional possibility that the specimen may have been taken in Chesterfield Co., South Carolina, which is within the recorded range of the species.

Disjunct distributions are extremely frequent with insects, especially in poorly-collected regions, and populations may be extremely localized. This record deserves provisional acceptance until checked thoroughly along the tidal reaches of the James and Appomattox rivers.

A specimen of *D. chrysorrhoeus* in the VPISU collection requires less attention. From a general entomology collection, it was ostensibly collected at Blacksburg in October 1978. The natural occurrence of this coastal species in western Virginia is totally implausible, and the species is one not likely to be accidentally transported in goods or plant material.

Cydnidae

Microporus obliquus Uhler. Heretofore the presence of this species in Virginia was known only from a collection made at Cape Henry, in Virginia Beach City (Froeschner, 1960). It is possible to add a second locality, albeit quite near the first: Dam Neck Naval Base, where one specimen was trapped at the "dune drift fence site", cleared 7 September 1990, during the Natural Heritage Program survey.

Melanaethus cavicollis (Blatchley). This burrowing bug was included as a probable in my 1971 treatment because of its known occurrence in eastern North Carolina (Blatchley, 1924). The survey of Seashore State Park, Virginia Beach City, which was conducted by the Natural Heritage Program in 1989-1990, yielded a single specimen from the "dune site" pitfall array, cleared on 26 July 1989. That the pitfalls were operated year-round for 15 months and produced but a single specimen suggests virtually no surface movement by the species, in contrast to the one that follows.

Tominotus communis (Uhler). Brimley (1938) listed this species for North Carolina without specific locality. Since the locality nearest Virginia cited by Froeschner (1960: 553) was Allardt, Roane Co., Tennessee, I postulated (1971: 24) that *T. communis* might be looked for in the vicinity of Bristol. While that possibility is still a viable one, the species turned up first in Virginia Beach, during the Heritage Program's sampling in Seashore State Park. Pitfall arrays were operated in three habitats, referred to as the "dune", "scrub", and "mesic" sites, but of the 27 specimens of *T. communis* taken during 1989, not one was trapped in the "mesic" site. Their occurrence at the other two sites is noteworthy. Specimens were taken during the sampling periods ending on May 1 to November 1, as summarized in the following table:

Date	Dune site	Scrub site
1 May		6
19 May	1	6
7 June	1	
21 June	2	
5 July	2	
26 July	4	
18 August		2
29 September	2	
1 November		1

It is curious that considerable surface activity commenced at the scrub site from mid-April to mid-May, and then essentially shifted during the summer to the dune site. Trapping during the first four months of 1990 did not produce any *communis* at either site, perhaps the influence of a late spring. Is the scrub site possibly better for hibernation, and dune better for the active life? Lastly, the species was not taken in pitfalls operated during the same time period at six other nearby sites in Virginia Beach. It is apparently ultra-stenotopic.

Froeschner's North Carolina material was from Southern Pines only, so that Seashore State Park is a range extension of 220 miles (355 km) to the northeast.

Aethus nigritus (Fabricius). The occurrence of this common Palearctic cydnid in northeastern United States has been treated comprehensively by Hoebeke & Wheeler (1984). These authors mapped the then-available records, discussed biology and habitat, and provided a historical summary of the species' establishment in this country, which dates back only to 1977.

VMNH possesses a series of 18 adults of *A. nigritus* taken from pitfalls set at the Dam Neck Navy Base, City of Virginia Beach, Virginia. The collection dates suggest a summer-long period of activity: 6 June 1990 (3), 1 August 1990 (1), 7 September 1990 (1), 12 October 1990 (2), 14 May 1991 (3). and 28 May 1991 (8). Since a number of Dam Neck samples have not yet been sorted, it is possible that many additional individuals remain to be recovered. Facies of the habitat sampled ("dune drift fence site") coincide with the preferred biotopes mentioned by Hoebeke & Wheeler. It is interesting to note that *nigritus* has not appeared in pitfall samples taken at a dozen other sites in Virginia Beach, several of them also in "dune" environments. Perhaps we have here a case of a recently introduced population still establishing its beachhead.

Previous known records are from Delaware, Pennsylvania, New Jersey, and Connecticut. The Virginia Beach population extends the species' range some 300 km (180 miles) south from Townsend, Delaware.

In my key to the Virginia genera of Cydninae (1971: 21), *Aethus* will identify as *Microporus* in couplet 4, but is readily distinguished by the virtually glabrous dorsum and much more extensive evaporatorial surface. The presence of both short stout "pegs" and macrosetae along the edges of the head give the impression of a small form of *Tominotus communis* (with material of which the VMNH specimens were at first intermixed).

Pentatomidae (Acanthosomatidae)

Elasmostethus atricornis (Van Duzee). Information published prior to 1971 identified this species as native to northeastern United States as far south as Maryland, and since its host plant (*Aralia spinosa* L.) is common in Virginia, I predicted the bug would eventually be found in this state. This prophesy was fulfilled on 8 August 1991, when I found specimens (VMNH) on the flowers of *A. spinosa* along Va. Rt. 702 in Breaks Interstate Park, Dickenson Co., Virginia. In life their dorsal color was a fine light greenish-yellow with brown posterior pronotum, quite distinct from the more sombre hues of *E. cruciatus*.

This is by no means the southernmost locality for *E. atricornis*, however, as it had already been recorded from the western, mountainous part of Oconee Co., South Carolina, by Jones & McPherson (1980).

Following Blatchley (1926), I treated the acanthosomatine pentatomids as a subfamily of Pentatomidae. More recently a concensus has favored its elevation to full family status.

No. 9: Coreoidea

No nomenclatorial changes have affected the Virginia species of Coreidae, Alydidae, and Rhopalidae, except that in 1980, the subgeneric name *Boisea* was raised (Göllner-Scheiding, 1980) to generic rank to include, among others, the species that I treated in 1975 as *Leptocoris trivittatus*. This modification has not met with the complete approval of other specialists on rhopalids (e.g. Schaefer & Chopra, 1982), and until the relationships of the genera *Leptocoris* and *Jadera* have been worked out perhaps it is best to continue use of *Leptocoris* for the Virginia species.

One species of Coreidae, *Acanthocephala declivis* (Say) was added to the fauna of Virginia by me in 1992 (Banisteria 1: 19), from a specimen taken along the James River in Surry County.

Coreidae

The tenuous evidence for inclusion of the cactus bug, *Chelinidea vittiger*, in the Virginia fauna was reviewed in my 1975 account. After nearly two decades of intensive (and invariably negative) inspections of *Opuntia* colonies, many of them very extensive, in many parts of the state, I am now forced to the belief that former optomism was misfounded. The imprecise early record for "Virginia" cited by Uhler (1863) could have been based upon a specimen taken in the lower Kanawha River valley prior to the separation of West Virginia. The single nymph supposedly taken at Herndon in 1911 has never been substantiated despite decades of collecting in northern Virginia. The specimen must have been mislabeled or misidentified.

It is herewith proposed that *C. vittiger* be removed from the list of Virginia coreids.

Alydidae

Stenocoris tipuloides (DeGeer). On 9 September 1993 an adult male thought to be of this species (see comment below) was collected by John M. Anderson of the VMNH staff near our pitfall site 1.2 miles (2 km) east of Claresville, Greensville Co., Virginia. We had recovered the trap contents and were making general collections in the vicinity prior to departure at nightfall. The *Stenocoris* was taken by sweeping tall grasses and sedges along a ditch bordering a long-fallow field, and in the net its form and green color persuaded me that it was a nymphal *Zelus luridus*. This misapprehension was dispelled when the specimen was pinned and recognized as an alydid. Subsequent reference to the collection at the National Museum of Natural History, and with extensive aid from Dr. R. C. Froeschner, led to provisional adoption of DeGeer's name. However, inconsistencies in the treatment of this genus in the most recent revision (Ahmad, 1965) and comparison of USNM material compels the opinion that when the Neotropical fauna of *Stenocoris* has been carefully studied, *tipuloides* may be applied to a species quite different from that at hand.

Although this "tipuloides" is common in Florida and southern Georgia, there are no records for North Carolina in Brimley's 1938 list, nor material in the USNM collection. The northernmost localities known to me are represented by two specimens from South Carolina in the Clemson University collection, one from Blackville, Bamberg County (5 August 1938), the other from Clemson, Oconee Co. (14 July 1936). Of these locations, Blackville is in the Coastal Plain where the species would be expected to occur. Clemson is substantially more inland, and the specimen cited may be adventitious or mislabeled. With reference to Blackville, the Claresville specimen extends the known range of

tipuloides about 450 km (270 mi) northeastward.

The genus was not even considered as probable for Virginia when I compiled my 1975 treatment and was not included in the key to local genera of Alydidae, in which *Stenocoris* will identify as *Protenor* in the first couplet. The two may be easily distinguished by examination of the beak: in *Stenocoris* the third and fourth segments are subequal in length; in *Protenor* the fourth is at least twice as long as the third.

Summary

The following name changes have affected Virginia heteropterans since publication of my two synopses (1971, 1975):

Brochymena arborea becomes *Parabrochymena arborea*
Peribalus limbolarius becomes *Holcostethus limbolarius*
Podisus modestus becomes *Podisus brevispinus*
Podisus fretus becomes *Podisus neglectus*
Apateticus cynicus becomes *Apoecilus cynicus*
Chlorochroa uhleri becomes *Chlorochroa persimilis*
Rhytidolomia belfragei becomes *Chlorochroa dismalia*

The following species are added to the 1971 and 1975 lists:

Diolcus chrysorrhoeus (Fabricius) (Scutelleridae)
Corimelaena obscurus McPherson & Sailer (Corimelaenidae)
Tominotus communis (Uhler) (Cydnidae)
Aethus nigritus (Fabricius) (Cydnidae)
Melanaethus cavicollis (Blatchley) (Cydnidae)
Elasmostethus atricornis (Van Duzee) (Pentatomidae)
Stenocoris tipuloides (DeGeer) (Alydidae)

The following species should be deleted from the Virginia list:

Chelinidea vittiger Uhler (Coreidae)

Phenetic and biotope information on *Tominotus communis* in Seashore State Park suggests an interesting problem to be investigated in depth.

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