NOTES ON VIRGINIA BUTTERFLIES, WITH TWO NEW STATE RECORDS[1]

CHARLES V. COVELL, JR.
Department of Biology, University of Louisville, Louisville, Kentucky 40208

AND

GERALD B. STRALEY
Botany Department, Porter Hall, Ohio University, Athens, Ohio 45701

In 1951 Austin and Leila Clark published *The Butterflies of Virginia.* This work crowned 20 years of avid collecting and observation in the Old Dominion by the Clarks and their colleagues, and brought together all the records and knowledge about the Virginia butterfly fauna up to that time. According to the nomenclature used by the Clarks, a total of 154 species and subspecies (144 species) was recorded as having been collected in Virginia. Keys, diagnostic features, range, variation, occurrence, season, and interesting discussions were given for the butterflies and a complete bibliography of literature on Virginia butterflies rounded out the work.

Since the appearance of Clark & Clark (1951) very little has been published to add to our knowledge of the Virginia butterfly fauna. Covell (1962) added *Satyrium kingi* (Klots & Clench) to the State list and Straley (1969) recorded *Thymelicus lineola* (Ochsenheimer) for the first time from the State. Nomenclature and arrangement of species were brought into line with dos Passos (1964), the present standard for North American Rhopalocera classification, by Covell (1967). The latter list also included the first record of *Megathymus yuccae* (Boisduval & Le Conte) for Virginia.

In this paper we include two more first records for the State—*Problema bulenta* (Boisduval & Le Conte) and *Satyrium caryaevorus* (McDunnough). In accordance with the dos Passos arrangement, plus recent changes in the nomenclature of *Lethe*, 158 species and subspecies (149 species) of butterflies are now known to have been taken in Virginia.

Nomenclature and arrangement of species employed in this paper follow dos Passos (1964, 1970) and other recent works; but references are made to coverage of the species in Clark & Clark (1951). Botanical nomenclature follows Massey (1961).

Our purpose in writing this paper is to add our records and observa-

[1] University of Louisville Contribution in Biology, No. 155 (New Series).

tions on certain butterfly species to those of the Clarks, thus bringing *The Butterflies of Virginia* more nearly up to date. In addition to our own records we include information from others who have collected in the State in the past 20 years and records from the Field Season Summaries of the *News* of the Lepidopterists' Society.

We concentrate our attention on the rarer species in the State, giving range extensions and new county records for species previously known from only a few counties. We hope that this additional information will be of value in helping other collectors find new collecting areas, especially for the rarer species in Virginia.

Covell's records from the Commonwealth span the years 1952 to 1971, with most of his collecting having been done between 1958 and 1964. He visited 81 counties, taking at least 5 butterfly species in each. Straley has actively collected from 1963 to the present. We have both resided in several different areas of the State and have concentrated on those areas; both our efforts, combined with those of other collectors, have encompassed most of the State. We have both done our most intensive collecting in the Norfolk-Virginia Beach area, and in Giles and Montgomery counties.

Specimens have for the most part been retained in our private collections. However, a large amount of representative material has been placed in the collection of the Entomology Department of Virginia Polytechnic Institute and State University, Blacksburg, Virginia. Further information on species treated is available from the authors.

In recent years there have been several changes in political boundaries in Tidewater Virginia, which might cause some confusion when one compares records in this paper with those of Clark & Clark (1951). The counties of Norfolk, Princess Anne, Warwick, and Elizabeth City no longer exist. The City of Norfolk is the same; but the remainder of old Norfolk County is now the City of Chesapeake, Princess Anne County is now the City of Virginia Beach, Warwick County is the City of Newport News, and Elizabeth City County is now the City of Hampton.

Treatment of Selected Species

MEGATHYMIDAE

Megathymus yuccae (Boisduval & Le Conte). We know of no other records of this skipper since the sighting of larval tents by the late F. H. Chermock near Sandbridge, Virginia Beach [reported in Covell (1967), p. 21], although several colonies of *Yucca filamentosa* L. have been checked in Virginia Beach on several occasions by Straley and Anderson.

HESPERIIDAE

Panoquina panoquin (Scudder). *Panoquin* has been observed quite often straying for some distances from its salt marsh habitat into open fields and the edges of woods.

We have taken it commonly on flowers of white clover (*Trifolium repens* L.), sweet pepper bush (*Clethra alnifolia* L.), and the blue mist-flower (*Eupatorium coelestinum* L.). Covell added a new county record: King and Queen Co., near West Point, 15 Sept. 1962.

Panoquina ocola (Edwards). We have three new county records in the State for *ocola*: Giles (Straley), Montgomery and Middlesex (Covell), which support the Clarks' observation that *ocola* occurs in the Coastal Plain and southwestern mountains, but not in the heart of the Piedmont (p. 186).

Amblyscirtes aesculapius (Fabricius). We have found this skipper, known by the Clarks as *textor* Hübner, common in many areas of southeastern Virginia. The Clarks (p. 180) mention that it is attracted to the flowers of *Prunella* and *Elephantopus*. In addition to these we have taken it frequently on white clover, dogbane (*Apocynum cannabinum* L.), and sweet pepper bush, mostly at the edges of woods and along forest paths. We agree with the Clarks that there is a spring brood, as we have found it in late April and early May.

Amblyscirtes carolina (Skinner). *Carolina*, another flower visitor, tends to hug the ground in flight. We have found it especially attracted to flowers in the rose family, i.e. blackberry (*Rubus*), cinquefoil (*Potentilla*), and strawberry (*Fragaria*), as well as sweet pepper bush, swamp milkweed (*Asclepias incarnata* L.) and others. The form *reversa* Jones needs a great deal more critical field and laboratory study. A number of collectors feel that *reversa* may be a distinct species rather than a form of *carolina*.

Atrytonopsis hianna (Scudder). Records of this species from Montgomery (VPI Collection) and Giles (Straley) extend the range somewhat westward in Virginia. Even more interesting, however, are Anderson's records from Nansemond, Chesapeake, and Virginia Beach (6 to 24 May) which are the first known captures of *hianna* in southeastern Virginia. It probably occurs throughout the State.

Euphyes palatka (Edwards). Although several collectors have searched diligently for *palatka* in southern Virginia Beach where Otto Buchholz took it, none had been found since his records of 1944. Finally, in 1971, Anderson succeeded in collecting a male on 7 June on pickerelweed (*Pontederia cordata* L.) in Currituck County, North Carolina, just across the State line from Virginia Beach, and another male on 11 June at Blackwater in Virginia Beach. *Palatka* may venture this far north only sporadically.

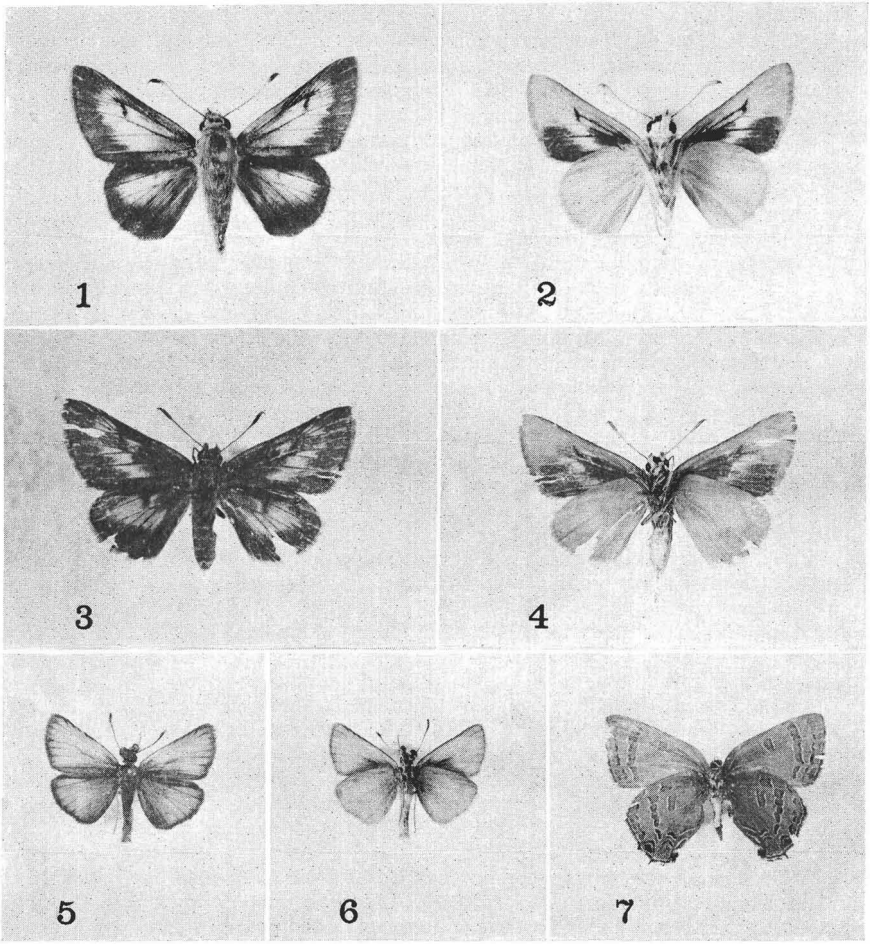
Euphyes dion dion (Edwards). A record of *dion* in New Kent County (Straley) extends the range of this subspecies slightly northward in Virginia. It was previously known only from three counties bordering North Carolina.

Euphyes dion alabamae (Lindsey). Although it is now generally considered a subspecies of *dion*, *alabamae* was thought to be a distinct species by the Clarks (p. 174). Dr. Lee D. Miller (pers. comm.) has collected and examined individuals from the Dahl Swamp, Accomack County, that the Clarks considered *alabamae*. He is of the opinion that this population may be an undescribed subspecies—not *alabamae*. This is another species-subspecies complex which needs more careful study.

Euphyes dukesi (Lindsey). *Dukesi* can be collected in quantity on pickerelweed flowers along the North Landing Road and at Blackwater in Virginia Beach. The Clarks (p. 176) did not realize that it has a fall brood. We have fall records from 2 August to 9 September in the localities mentioned by the Clarks.

Poanes yehl (Skinner). We must disagree with the statement by the Clarks (p. 172) that *yehl* is "exceedingly shy and difficult to catch." We have found it very easy to net on numerous occasions, especially when it is visiting its favorite flowers—pickerelweed, swamp milkweed, and sweet pepper bush. *Yehl* is one of the most common skippers flying in southeastern Virginia during late July and August.

Problema bulenta (Boisduval & Le Conte). **Figs. 1–4.** The discovery of this little-known skipper in Virginia is without doubt the most exciting addition to the butterfly fauna of the State in recent years. It was first collected in the State by John Bauer and Bruce Dixon, 21 August 1967, about two miles south of the town of



Figs. 1–7. Virginia butterfly specimens: **1**, **2**. *Problema bulenta,* male, New Kent Co., 17 Aug. 1970, upper and lower aspects; **3**, **4**. *P. bulenta,* female, same data as male, upper and lower aspects; **5**, **6**. *Thymelicus lineola,* male, Eggleston, Giles Co., 21 June 1968, upper and lower aspects; **7**. *Satyrium caryaevorus,* female, Eggleston, Giles Co., 4 July 1963, lower aspect.

Lanexa, along the Chickahominy River in the extreme southeastern corner of New Kent County. One female was placed in the Carnegie Museum in Pittsburgh and presumably forgotten until July 1970, when Nicolay and Straley were visiting the museum and noticed the specimen.

The Virginia locality was visited several times that August by Anderson, Nicolay, Covell, and Straley; and after many hours of collecting, an additional 14 males and 4 females were taken, all on the flowers of swamp milkweed. Hoping to find an earlier brood, Anderson searched the area unsuccessfully on 19 July 1971; but he and Nicolay did take two more males in August, 1971.

The habitat for *bulenta* is the broad expanse of marshy flood plain of the Chickahominy River. The dominant plants along the river are pickerelweed, swamp milkweed, buttonbush (*Cephalanthus occidentalis* L.), rose mallows (*Hibiscus moscheutos* L.), cattails (*Typha* sp.), and various grasses and sedges, all partially submerged at high tide. Islands and peninsulas of higher ground support shrubby dogwoods (*Cornus* sp.), bald cypress [*Taxodium distichum* (L.) Richard], and black gum (*Nyssa sylvatica* Marsh). Due to the extensiveness of the marshy area along the Chickahominy and the James River into which it flows, it seems likely that *bulenta* may occur widely in the area. Accessibility to much of the area is limited—a problem which may be solved by use of a boat for collecting.

Wallengrenia otho otho (Smith). The Clarks (p. 167) recognized two subspecies: *otho otho* (with dull orange or orange-red ground color on the hindwings beneath), and *otho egeremet* (Scudder) (with dark purplish-brown ground color on the hindwings beneath). According to the records cited by the Clarks, *otho otho* occurs in the Piedmont and Coastal Plain, and *otho egeremet* flies throughout the State, including areas where *otho otho* has been collected. Our own records from the Dismal Swamp, New Kent County, and Virginia Beach indicate that the two forms are sympatric in these areas. We feel that the differences in pigmentation may be due to diet or otherwise environmental in nature, and do not indicate subspeciation. Sympatry could indicate that the two are separate species. Perhaps careful study of the differences will clarify the situation.

Hesperia metea Scudder. The Clarks list six county records for this species and state (p. 160) "undoubtedly much more generally distributed in the western part of the State than these records would indicate." We support this statement with four additional county records: Stafford (Nicolay), Henry and Giles (Straley), and Rappahannock (Ferris). We have found it attracted to low-growing flowers especially those in the Rosaceae. It can also be found flying about grassy clearings among cedar groves on limestone outcrops, as Covell found in Montgomery Co.

Hesperia leonardus Harris. Covell has taken *leonardus* in three additional counties —Powhatan, Prince William, and Stafford. The Powhatan County record shows its range extends more into central Virginia than indicated by the Clarks (p. 160).

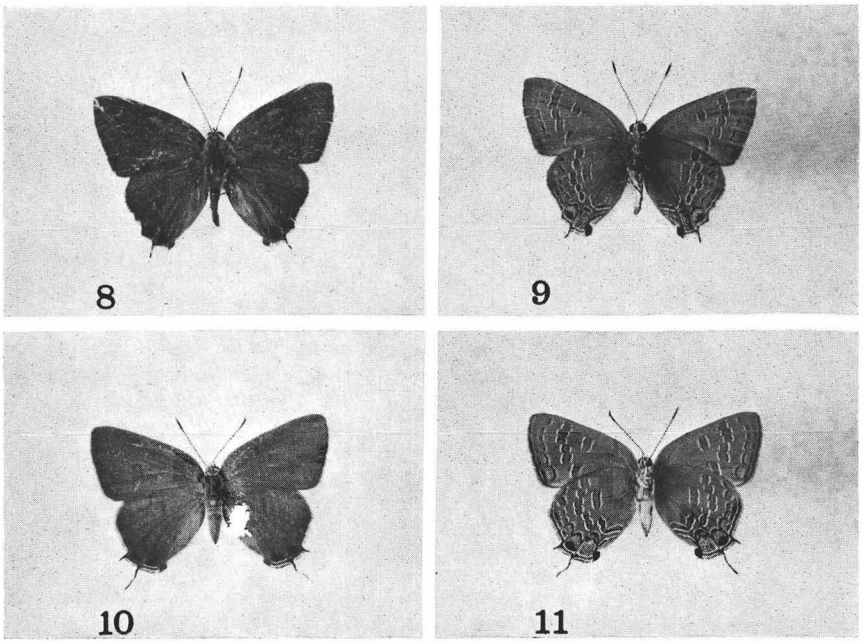
Thymelicus lineola (Ochsenheimer). **Figs. 5–6.** Straley (1969) reported the first known occurrence of the European Skipper in Virginia in the mountains in Giles County. Mitchell took two males in Poverty Hollow in neighboring Montgomery County on 22 June 1969. Straley found it fairly common but worn on 3 July 1971, in a meadow near the original locality; and Showalter also took it in 1971 at Blacksburg in Montgomery County. *Lineola* is probably well established in western Virginia and probably now even farther south and east.

Staphylus mazans hayhurstii (Edwards). The Clarks (p. 153) mention that *hayhurstii* is confined to the Coastal Plain. We have additional records in the eastern part of the State for Stafford (Nicolay), Virginia Beach and Northumberland (Straley). A most surprising capture of this species was made by Straley in Henry County in the western edge of the Piedmont. A male was first taken in a weedy area in Martinsville on 30 June 1969; three males and a female were taken in the same locality on 30 July 1969; and a male was caught on 23 May 1970, near the town of Figsboro, also in Henry County. These records extend the range of *hayhurstii* about two hundred miles westward in Virginia.

Urbanus proteus (Linnaeus). Covell has three additional Coastal Plain county records: Middlesex, Nansemond, and Chesapeake, all in late September 1959.

PIERIDAE

Colias eurytheme Boisduval. **Figs. 12–15.** There is always a great deal of variation in *eurytheme* and its hybrid with *philodice*, both seasonally and among specimens caught at one time in any one locality. Straley has taken four aberrations of this



Figs. 8–11. *Satyrium kingi* from Virginia: **8, 9**. male, near Suffolk, Nansemond Co., 21 June 1970, upper and lower aspects; **10, 11**. female, same data as male, upper and lower aspects.

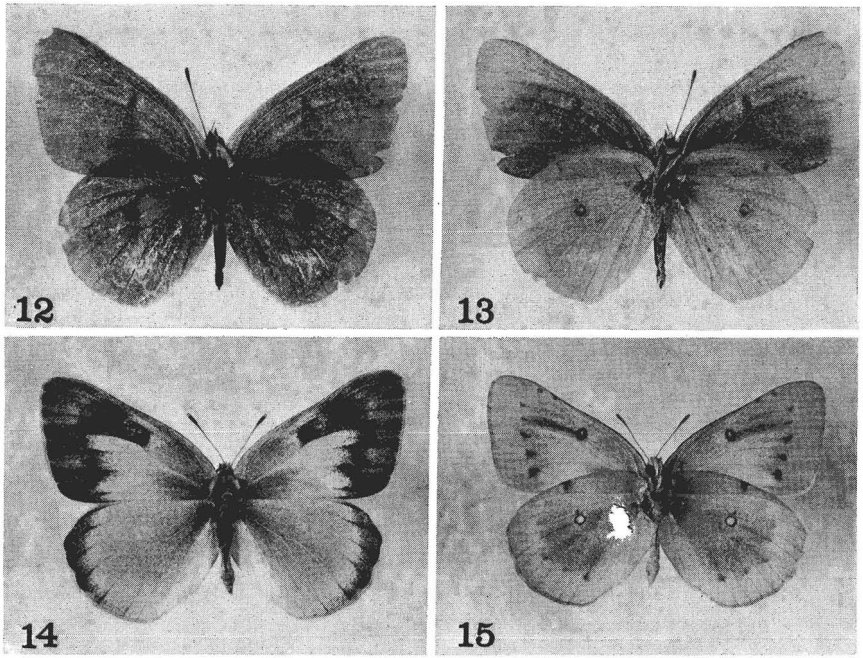
common butterfly while searching for more choice species. All were collected in open grassy meadows just north of Buckeye Mountain about three miles west of the town of Eggleston, in Giles County.

The most unusual was a melanic male taken on red clover (*Trifolium pratense* L.) on 6 September 1965 (**Figs. 12, 13**). The upper surface is a dark sooty brown, lightly dusted with yellow scales basally. The normally black borders are lighter brown than the rest of the wings. On the lower surface the hindwings are a uniform dull yellow and the forewings are dull brown with yellow tips and costal margins.

The other three aberrations are all similar on the lower surface. All have black streaks from the submarginal row of spots inward on the underside of the forewings and a brown patch or broad brown streaks from the submarginal spots inward on the hindwings. The first specimen of this aberration was collected on 19 June 1962. The upper surface was normal except for a noticeable pink iridescence in the orange ground color. The second specimen (**Figs. 14, 15**) was an orange female taken on 22 September 1965. It has wide black borders extending into the spot at the end of the cell on the upper surface of the forewings. The submarginal yellow spots in the black border are greatly reduced and smudged. A white female was collected on 24 April 1966, with the upper surface normal. The under surface, however, has the same black-streaked forewings and brown-streaked hindwings.

RIODINIDAE

Calephelis virginiensis (Guérin–Méneville). This small metalmark was recorded from four localities in only two counties—Princess Ann (now Virginia Beach)



Figs. 12–15. *Colias eurytheme* from Virginia: **12**, **13**. melanic male, Eggleston, Giles Co., 6 Sept. 1965, upper and lower aspects; **14**, **15**. aberration female, Eggleston, Giles Co., 22 Sept. 1965, upper and lower aspects.

and Nansemond. We have found it in three other locations in Virginia Beach (Anderson & Straley), three in Chesapeake (Anderson & Covell), and one in the City of Norfolk (Anderson). The best locale we have found for *virginiensis* is a low, weedy roadside ditch along London Bridge Road at Oceana Naval Air Station in Virginia Beach, where eighteen specimens were taken in a short time one day. This species is probably more widely distributed than our records indicate, but is easily overlooked owing to its small size, restricted occurrence, and probably short flight period for each brood. Adults seem to prefer alighting on broad leaves, but they often visit the flowers of the blue mist-flower (*Eupatorium coelestinum* L.).

Calephelis borealis (Grote & Robinson). The Poverty Hollow (Montgomery County) colony of *borealis* continues to flourish. It has been found there regularly in recent years by a number of collectors. Covell found another colony in Montgomery County along Slusser Chapel Road. Kenneth Frank discovered a colony at Nature Camp, near Vesuvius, in Rockbridge County, which is a new county record. This brings to five the number of counties in Virginia in which *borealis* is known to occur.

LYCAENIDAE

Harkenclenus titus mopsus (Hübner). The Clarks (p. 79) record *mopsus* from seven counties only in the Piedmont and Shenandoah Valley of the State. We have additional records from Giles (Straley), Rappahannock (Ferris), Stafford (Nicolay), Nansemond (Anderson), Middlesex and Gloucester (Covell). The latter three counties extend the range of *mopsus* into the Coastal Plain. It should be looked for

throughout the State, especially on the flowers of butterflyweed (*Asclepias tuberosa* L.) and common milkweed (*Asclepias syriaca* L.).

Satyrium liparops strigosa (Harris). This subspecies is recorded from five counties in the State by the Clarks (p. 81). We have three additional records: Rockbridge (Covell), Alleghany (Clench), and Giles (Straley). Although it is probably not "rare" as the Clarks say, it is certainly not easily encountered.

Satyrium kingi (Klots & Clench). **Figs. 8–11.** Covell (1962) recorded the first capture of *kingi* in Virginia on 11 June 1958. Unfortunately the locality near the Norfolk Airport is in the heart of the urban expansion of the cities of Norfolk and Virginia Beach, and an elementary school now stands where *kingi* once flew. Several other localities have, however, been discovered by other collectors in the State. Miller collected one worn female five miles south of Suffolk on the west side of the Dismal Swamp.

Anderson found it near the Suffolk Airport on 16 July 1967. This spot has been collected every year since then by several collectors and has yielded a large number of specimens. The locality is a second growth mixed deciduous woods. Males have been noted visiting the flowers of sourwood [*Oxydendrum arboreum* (L.) DC.] where they are easily taken, especially with a long-handled net. More commonly they sit on the tops of broad leaves and sun themselves. The females tend to fly lower among the underbrush and they might even be called sluggish for a hairstreak. We have rarely seen the females visit flowers.

Another colony of *kingi* was found by Straley in July 1971, in Chesapeake on the east side of the Dismal Swamp at the junction of routes 104 and 190, in the same type of cut-over deciduous woods. There are undoubtedly other colonies in the Coastal Plain of Virginia which should be sought beginning about 10 June.

Satyrium calanus falacer (Godart). We have found *falacer* present, although not common, in the southeastern counties and cities of Norfolk, Chesapeake (Anderson), Nansemond and Virginia Beach (Straley), where it was previously unrecorded. *Falacer* is at times very common in the mountains of the southwestern part of the State, especially attracted to New Jersey tea (*Ceanothus americanus* L.), common milkweed, and dogbane.

Satyrium caryaevorus (McDunnough). **Fig. 7.** The first known record of this northern hairstreak in Virginia is from Giles County in the mountains. One female was taken on New Jersey tea by Straley on 4 July 1963. The specimen was thought at that time to be a female *falacer* and was papered and not identified until 1970. The determination was confirmed by Nicolay. It has been compared with a number of *caryaevorus* from Connecticut and New York and matches them quite closely.

The locality is a steep dry hillside just north of Buckeye Mountain about three miles west of the town of Eggleston. The foodplant, hickory (*Carya* sp.), is scattered over the hillside and is common on Buckeye Mountain. The area has been collected briefly on two occasions since 1963, but no more *caryaevorus* have been taken. A more thorough search of the area and similar habitats in early July should turn up more specimens.

Satyrium edwardsii (Saunders). The Clarks (p. 80) record *edwardsii* from only four counties. Covell has an additional four: Montgomery, Middlesex, King and Queen, and Gloucester. This is another species of hairstreak which has probably been overlooked in most of the State, and is sometimes locally common in season.

Callophrys irus (Godart). We have additional records for *irus* in Stafford (Nicolay) and two locations in Montgomery (Mitchell). *Irus* is probably more widespread than our records indicate. It should be sought where the foodplant, lupine (*Lupinus perennis* L.), grows.

Callophrys henrici (Grote & Robinson). We have new county records for *henrici* from nine counties, four of which are in the Coastal Plain, from which there were previously no records. The counties are: Giles and Northumberland (Straley), Stafford (Nicolay), Rappahannock (Ferris), Goochland (Powell), Virginia Beach

(Anderson), Middlesex, King William, and Nansemond (Covell). It should be considered common on the Coastal Plain and generally distributed across the State as the dominant Elfin species.

We have found *henrici* most common along the wooded trails in Seashore State Park, Virginia Beach, on the very first warm days of spring. It rests on sunny spots on the trails or on broad leaves where it is easily netted. In other localities it may be caught on redbud blossoms.

Callophrys augustinus croesioides Scudder. *Augustinus* was also not recorded from the Coastal Plain of Virginia until Covell took it in Chesapeake on 23 April 1960. It was taken by Straley in Northumberland and in a second locality in Chesapeake in 1971. It should be expected throughout the State, often flying with *henrici.*

Callophrys gryneus (Hübner). Covell took a striking aberrational female among the red cedars on a limestone outcrop near the tunnel at Pepper Station, Montgomery Co., 26 April 1962. The underside is generally brown with dark olive suffusion, and all the white lines and other markings are very obscure and dark, contrasting very little with the ground.

Atlides halesus (Cramer). We agree with the Clarks (p. 77) that *halesus* is not very common in southeastern Virginia, but is regularly present and easily overlooked because of its tendency to stay high up in the trees. We found it most common on the flowers of devil's club (*Aralia spinosa* L.) where a long handled net is a necessity for collecting any number of specimens. Occasionally it comes down to the flowers of sweet pepper bush and climbing hempweed [*Mikania scandens* (L.) Willd.].

Euristrymon ontario (Edwards). Clench (1971) recorded *ontario* from Alleghany County, Virginia. His five specimens represent the largest number of this species taken at any one locality in the State. It has also been taken in Middlesex (Covell), bringing to five the total number of counties in which it has been found in Virginia. It is probably not an "infrequent casual" as the Clarks (p. 80) say, but is present in isolated colonies which have been mostly overlooked.

Panthiades m-album (Boisduval & Le Conte). We have additional records for *m-album* in the following counties: Giles (Straley), Rappahannock (Ferris), Rockbridge (Covell), Chesapeake (Anderson & Straley), Stafford and Virginia Beach (Nicolay). Most of these records represent captures of single specimens, supporting the Clarks' statement (p. 78) that *m-album* is apparently a permanent resident, but often of irregular occurrence in any one place. We have taken it most commonly in Chesapeake, attracted to the flowers of sourwood and especially sweet pepper bush.

Erora laeta (Edwards). At the time the Clarks completed their work on the Virginia butterflies in 1951, only one specimen of the Early Hairstreak was known to have been taken in Virginia (Mountain Lake, Giles County, 23 June 1938). A second specimen, a fresh female, was collected by Straley with his fingers at Eggleston, also in Giles County, on 7 May 1964, on moist sand on the bank of New River. The location was near a wooded area, but not a typical habitat where one might expect *laeta.* Mitchell also took a specimen in neighboring Montgomery County in Poverty Hollow, 27 April 1969.

The only multiple capture of *laeta* in Virginia was by Wagner in July 1970, again in Giles County, on the road between Mountain Lake and West Virginia. In a letter dated 19 July 1970, Wagner stated, "I have seen over two dozen *Erora laeta*! . . . There is a spot along the West Virginia Road where you can see two or three at a time." He took nine specimens, but spent a great deal of time just observing *laeta,* hoping to learn more about the habits of this elusive hairstreak. Unfortunately, because of a sudden change of weather to dark and rainy lasting for more than a week, the butterflies disappeared and the investigations ceased.

NYMPHALIDAE

Speyeria diana (Cramer). This favorite of collectors can still be collected commonly in the vicinity of Brush Mountain, just west of Blacksburg in Montgomery

Co., and probably in many other localities in the lower mountainous regions of Virginia. Covell found that the males appeared in the first week in July, not finding any in late June, during 1960–62. They at first kept to the higher elevations (around 2,000–2,500 ft.), flying along and alighting in the dirt road atop Brush Mountain. There they might be found visiting animal excrement or carrion. After a few days they would be found visiting flowers of the milkweeds *Asclepias tuberosa* L. and *A. syriaca* L., growing in bends in Rt. 460 down the eastern slope, and in Poverty Hollow at the bottom of the western slope of Brush Mountain. The affinity of *diana* for milkweed blossoms—especially *A. tuberosa*, the Orange Milkweed or Butterfly-weed—seems general for the species, as Covell has collected both sexes on these flowers in North Carolina and Kentucky as well. Mitchell has reported good catches of *diana* in this general area in more recent years. The middle of July seems the best time to seek both sexes in good condition.

The Clarks (p. 57) also mentioned Coastal Plain populations of *diana*, recorded from counties south of the York River (Chesterfield and James City south into Nansemond counties). The continued presence of the species in this general area was indicated by the capture by Covell of males on *A. tuberosa* beside Rt. 33 a few hundred yards from its junction with Rt. 17 at Glenns in Gloucester Co. The species was seen there on 19 June 1958, and males were collected there on 25, 26, and 27 June. As in the mountains, species visiting *Asclepias* with *diana* included *S. cybele* and *Harkenclenus titus mopsus*. These captures represent a new county record as well as a slightly northern range extension in the Coastal Plain, apparently the first taken north of the York River.

SATYRIDAE

Lethe portlandia anthedon (Clark). The Clarks (p. 31) record this butterfly from only four mountain counties in the western part of the State. We can add two additional counties: Montgomery (Covell & Straley, four locations) and Rockbridge (Kenneth Frank). The Clarks mention only one brood; but we have records for every month from 20 May to 4 Aug., indicating at least two broods, maybe three. All our records are for captures of single specimens.

Lethe appalachia R. L. Chermock. This species was referred to by the Clarks and by Covell (1967) as a subspecies of *L. eurydice* (Johansson). In accordance with Cardé, Shapiro & Clench (1970), we here refer to *appalachia* as a valid species. Note the Virginia records, including paratypes, cited on p. 87 of Cardé, Shapiro & Clench, adding to those of the Clarks (p. 32). Covell found a small colony in grassy backwaters of a pond in Poverty Hollow, Montgomery Co., in 1960, and the two following years (18–31 July).

ACKNOWLEDGMENTS

We wish to express our gratitude to the following for their help in the form of records and other valuable information and assistance in preparing this manuscript: LCDR Richard A. Anderson, Fayetteville, N.C.; Mr. Harry K. Clench, Carnegie Museum, Pittsburgh, Pa.; Mr. William D. Field, U.S. National Museum, Washington, D.C.; Mr. Kenneth Frank, Boston, Mass.; Dr. Lee D. Miller, Allyn Museum of Entomology, Sarasota, Fla.; Mr. Judson T. Mitchell, Blacksburg, Va.; Col. Stanley S. Nicolay, Virginia Beach, Va.; Mr. Richard Pine, Bayside, N.Y.; Mr. Llewellyn Powell, Richmond, Va.; Mr. Amos Showalter, Waynesboro, Va.; and Dr. Warren H. Wagner, Jr., University of Michigan, Ann Arbor, Mich. For the photography we are indebted to Warrant Officer G. G. Thomas and S/Sgt. Richard E. Banzal, USMC.

LITERATURE CITED

CARDÉ, R. T., A. M. SHAPIRO, & H. K. CLENCH. 1970. Sibling species in the *eurydice* group of *Lethe* (Lepidoptera: Satyridae). Psyche 77(1): 70–103.

CLARK, A. H. & L. F. CLARK. 1951. The Butterflies of Virginia. Smithsonian Misc. Coll. 116(7), 227 p., 30 pls.

CLENCH, H. K. 1971. Some records of *Euristrymon ontario* (Lycaenidae). J. Lepid. Soc. 25: 80–82.

COVELL, C. V., JR. 1962. The occurrence of *Satyrium kingi* (Lycaenidae) in Virginia. J. Lepid. Soc. 18: 197–198.

———. 1967. A checklist of the butterflies and skippers of Virginia. Va. J. Sci. 18: 21–24.

MASSEY, A. B. 1961. Virginia Flora. Tech. Bull. 155, Va. Agr. Exp. Sta., Blacksburg, 258 p.

DOS PASSOS, C. F. 1964. A Synonymic List of the Nearctic Rhopalocera. Mem. Lepid. Soc. 1. 145 p.

———. 1970. A revised synonymic catalogue with taxonomic notes of some nearctic Lycaenidae. J. Lepid. Soc. 24: 26–38.

STRALEY, G. B. 1969. Occurrence of *Thymelicus lineola* (Hesperiidae) in Virginia. J. Lepid. Soc. 23: 76.

A MASSIVE MIGRATION OF *KRICOGONIA* (PIERIDAE) IN CAMPECHE, MEXICO

Byers (1971, J. Lepid. Soc. 25: 124–125) notes that, ". . . this is the first record of a migration of a species of *Kricogonia*," and, "Recent books on insect migration . . . do not mention the genus." My article on migrations (1959, J. Lepid. Soc. 13: 62–64) must have been overlooked, as I recorded the migration of *Kricogonia lyside* Godart. Attention must also be called to articles by Clench (1965, J. Lepid. Soc. 19: 223–224), Heitzman (1962, J. Lepid. Soc. 16: 249–250), Howe (1964, J. Lepid. Soc. 18: 26), and Welling (1964, J. Lepid. Soc. 18: 229–230).

dos Passos (1964, A Synonymic List of the Nearctic Rhopalocera. Mem. Lepid. Soc. 1, p. 46) refers to two species, *K. lyside* Godart 1819, and *K. castalia* (Fab.) 1793. de la Torre y Callejas (1958, Reconsideración Taxonómica de las Especies del Género *Kricogonia* Reakirt con Vista al Estudio de sus Órganos Genitales. Publ. Univ. Oriente, Santiago, Cuba) refers to *K. lyside* and *K. castalia* as being a single species, and *K. cabrerai* Ramsden 1920 as the other. As to which species we may be referring to, much must be left to speculation. Klots (1951, A Field Guide to the Butterflies. Houghton-Mifflin, Boston) notes that a thorough study of the complex needs to be made, most records being untrustworthy.

I take this opportunity to record another great migration of *Kricogonia.* I first note that 1971 seemed to be a year of intense rainfall in the Yucatan peninsula, after a few years of fair to mediocre precipitation. In my prior article (1959, op. cit.) I refer to dry year cycles alternating with wet year cycles, and migrations seeming to be associated with the latter. On 9 June 1971, on passing south of the city of Campeche, Campeche, and until reaching Escárcega, Campeche, I observed the heaviest migration I have ever seen of any kind of insect. Once again it was our commonly-reported *Kricogonia* sp. The heaviest part of the migration was slightly south of Lerma, through the villages of Sihochac, Seybaplaya, Haltunchén, Champotón, to about X-bacab, all in the state of Campeche. The slight wind was from the east, with the migration going straight against it. Where these butterflies originated, I could not guess, as all the way south to X-bacab the migration direction was straight east-