

NEWS

of the LEPIDOPTERISTS' SOCIETY

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THE TAXONOMIC IMPLICATIONS OF THE DISCOVERY OF *INCISALIA IRUS* IN FLORIDA

I have been studying *Incisalia irus* (Godart, [1824]), from 1974 to the present. I have examined a few hundred specimens from 19 states and the District of Columbia. Two specimens in a group of 80 sent by the late Dr. J. F. Gates Clarke from the USNM collection deserve special mention. One was labeled from Golden (Jefferson County), Colorado, the other from Verdi, Nevada. Verdi is northwest of Reno on the California Nevada state line. Both specimens are from the Oberthur/Barnes collection and it is very very doubtful they were collected at the locations on their labels. However, neither was a "typical" *irus*.

In 1975 The National Museum of France was kind enough to loan me a male specimen they believed to be the type of *irus*. I in turn sent it to the Allyn Museum, Sarasota, Florida, where it was photographed and validated by F. Martin Brown as Godart's holotype.

In 1977 Dr. Clarke sent a syntype of *Incisalia irus* *arsace* (Boisduval and Le Conte, [1833]), from the USNM for examination. This is also an Oberthur specimen. This syntype did not fall within the range of variation found in the *arsace* I have collected and I do not consider it a "valid" type specimen. See F. M. Brown, J. Lepid. Soc., 19:197-211, (1965), which deals with some of the problems with Boisduval via Oberthur "types."

While all populations of *irus* are variable in adult facies, the holotype is phenotypically similar to the darker populations in the New Jersey, Maryland, Virginia area. The primary larval host in this area is *Lupine*. From Rhode Island north and westward to Michigan, *irus* is of a smaller size and brighter, more contrasting below. In this cline the Michigan populations are the most distinct. *Lupine* is the host in this area. Southward into Virginia and the mountains to Georgia, *irus* can vary quite a bit from one location to another, but most of the populations in this area are "typical." However, some specimens are rather large and "rusty" below, especially in North Carolina. The host in this area is unknown to me.

In south coastal South Carolina *irus irus* is replaced by the much larger, less contrastingly-marked-below subspecies *arsace*. *Baptisia* is the larval host of *arsace*. Specimens I have examined from Louisiana, Arkansas and Texas are all the subspecies *hadra* Cook and Watson, 1909. *Hadra* is large (the same size as *arsace*) and has been reared on *Baptisia*.

Only two or three specimens of *irus* have been found near Savannah, Georgia. These were collected by Dr. Richard Arbogast several years ago. When I finally got a chance to see Dr. Arbogast's specimens two years ago, they looked rather

small and *irus*-ish and were not what I had expected.

Incisalia irus was discovered in Clay county, Florida, by Mr. Tom Neal in March of 1990. This population feeds on *Lupine*. This is of great interest because the 25 Florida specimens I have seen are the same size as nominate *irus* and near enough phenotypically to be called *irus irus*. I was as surprised with the Florida material as I was with the Savannah specimens, because I had expected to see large *arsace* looking specimens.

There is no "type locality" for *irus*. The original description is in French, and ends with two one sentence paragraphs as follows.

"We have not seen the female."

"Is it in America?"

This question does not refer to the female but to the species. This is so because the pattern in his descriptions was to list the species origin last.

I had been planning to limit the type locality of *irus* to New Jersey for three reasons: 1) based on the holotypes size and color, Rhode Island to Michigan *irus* is atypical and probably warrants subspecific status, 2) all "southern" *irus* were thought to be *arsace*, and 3) the holotype falls within the phenotype of New Jersey *irus*. But now it must be considered whether Godart may have obtained his type from Florida or Georgia since the phenotype in that area matches the holotype also. The fact that Godart wondered if the species was from America could point to its being of Floridian origin since that area was often thought of as "tropical" by some of the older workers.

At this point, the known biology of the Clay county, Florida population has raised the possibility that perhaps the Savannah, Georgia *irus* are also *Lupine* rather than *Baptisia* feeders. Which would account for the similarity between these two populations and their dissimilarity with south coastal South Carolina *arsace*. This also raises a couple of very interesting questions:

1) Is the difference in size between *arsace/hadra* and *irus* due to different larval hosts? Is the *arsace* phenotype due to a subspecific relationship with *irus* or is it only an ecotype?

2) Are *arsace/hadra* conspecific large sized *Baptisia* feeders, and *irus* a small sized sibling *Lupine* feeder? If not yet so, they seem to be diverging biologically in that direction. Or is *arsace* the product of a past convergence of *hadra* (a species moving north and east from Mexico) with *irus* (a species moving north from Florida)?

On March 6 & 9, 1991, I visited the Clay county, Florida location and collected three fresh females for ova. Unfortunately I failed to obtain any. However, I have started beds of the proper *Lupine* and *Baptisia* species in my backyard for rearing and cross feeding purposes which should eventually yield some fascinating results.

I decided to publish this in an informal publication because 1) enough interesting and worthwhile information has been brought to light that it needs to be disseminated, and 2) enough remains that it may be a few more years before any formal paper I do may be submitted and produced.

As a post script, I might add that the species Boisduval and Le Conte redescribed as *irus* in 1833 from Abbott's painting and information, was actually the insect Grote and Robinson described as *Incisalia henrici* in 1867. Thus, *henrici* was "discovered" by Abbott but invalidly described by Boisduval and Le Conte as *irus*. But, this is another story...

Rev. Ronald R. Gatrell, Res. Assoc.
Florida State Coll'n of Arthropods

WATCH WHERE YOU LAY THOSE EGGS!

On 13 August 1990, Brian Cassie, Director of the Massachusetts Butterfly Atlas Project, was working over an old field in Millis, Norfolk County, Massachusetts, which held extensive stands of lance-leaved goldenrod (*Solidago graminifolia*) in bud but not yet in bloom. A worn, black-colored swallowtail, which he sight-identified as *Papilio trolilus*, was seen fluttering about the tops of the goldenrod plants, making periodic stops to oviposit thereon. Over a period of about ten minutes some fifteen stops were observed. Five ova were recovered. This was no passing error on the part of the butterfly, but a persistent pattern, with the delivery of a significant number of eggs.

Brian gave me two of the ova, which had been laid on the very small leaves at the top of the plant, and I had the good fortune to observe them just as they hatched. Each had a white band about the abdomen, and the black integument bore tufts of short black bristles, both features indicative of first-instar *P. polyxenes*, not *trolilus*. I added a carrot leaf to the sprigs of goldenrod, and within 15 minutes both larvae had moved onto the carrot and were beginning to feed.

I was struck by the similarity in appearance of the pinnately cleft carrot leaf and the branching tops of the goldenrod stems, with their short, very narrow leaflets. The visual clues, to me, and possibly to the butterfly, were hard to separate. Allegedly, visual clues are very important to papilionids in the selection of oviposition sites. Whether there are any overlapping chemical clues between *Solidago* and the Umbelliferae, I do not know. However, the newly-hatched *polyxenes* larvae had no trouble deciding what they wanted. They thrived on carrot and emerged 25 and 26 September as a pair of well-formed adults.

There had been a clump of Queen Anne's Lace among the goldenrod plants used by the ovipositing female, but she was not seen to investigate it. On all the occasions that I have watched *polyxenes* oviposit, the eggs have been placed directly on the Umbellifera leaves, not merely in the general vicinity.

All of which indicates that (1) even experienced lepidopterists can have problems with field identification of lepidoptera, and (2) some butterflies may have similar problems with field identification of acceptable larval hostplants.

Dave Winter

AMERICAN MUSEUM OF NATURAL HISTORY GROUP COMPLETES ARGENTINE EXPEDITION

Robert and Barbara Eisele (Jujuy, Argentina) hosted twelve lepidopterists in the region for three weeks in February. In the planning stages for three years, the expedition was organized by Dr. Kurt Johnson (AMNH) and supported by the AMNH Thecla Research Fund. David Matusik (Field Museum, Chicago), ten other collectors, and some staff of the Instituto Miguel Lillo (Tucuman) joined the trip and concentrated day and night collecting on remote areas known for, or suspected of, high endemism. Over 10,000 specimens were collected, including some 30 new butterfly species (in four families) and numerous new Argentine and provincial records. Poorly known recently described taxa collected included *Strymon barbara*, *Strymon coronis*, *Calycopis nancea* and *Calystryma pyrre*. Argentina's first *Penaincisalia* species was discovered along with its first brassolids and two additional species of *Prepona*. High Andean "newsies" were taken in "*Thecla*", *Itylus* and *Hylephila*. Among unique areas visited was "Quebrada de las Cruces" where a small patch of spring-fed oasis in arid

terrain at 12,000 ft. supports four undescribed butterflies, to date known from no other locale. Unfortunately, Bruce MacPherson (Argentine Lepid. Soc. member who planned to be a co-host) took ill and was transferred to the United States. We wish him a speedy recovery!

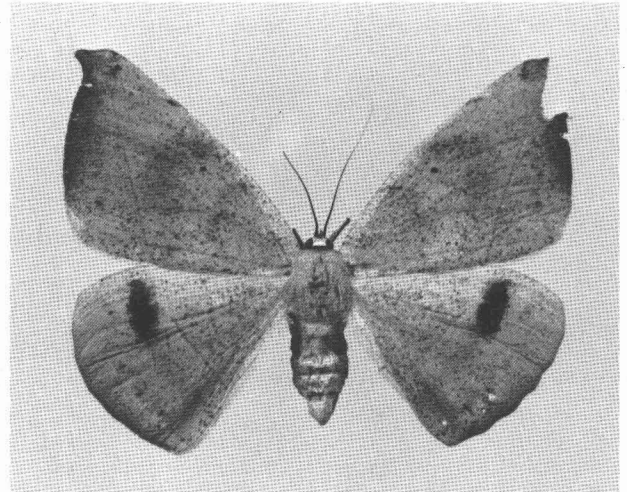
A NOTE ABOUT AN IMPORTANT OBSERVATION

I make occasional trips to the Rio Grande Valley from my home in Beaumont, Texas. On August 14, 1989 I saw a butterfly at Falcon State Park, Starr Co., Texas that may be a U.S. record. It was a fresh *Philaethria dido*. I was about to net it when a *Battus philenor* appeared, seemingly out of nowhere, and attacked it, scaring it off. This was by far the greatest disappointment of my expedition. However, I have been unable to find any previous records of *dido* having been encountered here before. This was definitely a Heliconian and not *S. stelenes biplagiata* which does occasionally occur in that area in October and November. I stand behind this identification 100% and only wish that I had the specimen to back it up.

Charles W. Bordelon
Beaumont, Texas

AN ACCIDENTAL OCCURRENCE IN NOVA SCOTIA OF *OXYDIA VESULA TRANSPONENS* (GEOMETRIDAE: ENNOMINAE) (WLK.)

On 30 May 1990, a large geometrid larva was collected by Mr. B. DeGeus at Avon Valley Greenhouse, Falmouth, Nova Scotia. The caterpillar was found feeding on a *Schefflera* plant recently shipped from Flora Dade Nursery, Naranja, Dade Co., Florida. The caterpillar pupated on 3 June 1990 and an adult female emerged on 17 June 1990. The specimen was identified as *Oxydia vesula transponens* (Wik.) from material contained in the Nova Scotia Museum Collection.



Female, *Oxydia vesula transponens* (Wik.), Falmouth, Kings Co., N.S., ex larva found on *Schefflera* 30 May 1990. Emerged 17 June 1990.

O. v. transponens occurs from Peninsular Florida south to Cuba and Hispaniola (Rindge, 1957, Am. Mus. Nov. 1849: 1-18). Kimbell (1965, Arthropods of Florida and neighboring land areas, 1: Lepidoptera of Florida, an annotated checklist. Florida Dept. Agric., Gainesville, Florida, 363 pp.) reported *O. v. transponens* as occurring throughout the state and flying throughout the year. The larvae is a general feeder having been reported from oak, citrus, *Cassia*, Rubiaceae, *Acalyphy wilkesiana* (Ringe, op. cit.) as well as *Croton*, and *Triplaris* (Kimbell, op. cit.). A photograph of the specimen is provided to aid in identification. The specimen has been deposited in the Canadian National Collection, Ottawa.

Kenneth A. Nell
Agriculture Canada Research Station
Kentville, Nova Scotia

COMMENTS ON ASTEROCAMPA IDYJA

I think it is worthy of a short comment to emphasize that the 1990 Season Summary (NEWS No. 2 Mar/Apr 1991) listing of Asterocampa idyja, Sonoita Creek, SANTA CRUZ Co, for Arizona is a new United States record, as listed in the text, but not the header (p. 16).

The correct citation addition to the Ferris (1989) and Miller & Brown (1981) Catalogue/Checklist of the Butterflies of America North of Mexico would be:

Genus CCXXI: Asterocampa Roerber

4. idyja (Geyer) DOXOCOPA, [1828]. In Huebner, Samml. exot. Schmett. 3:pl.[13]. TL - Cuba. Type presumably lost; Geyer's figures considered to represent type.
 - a. i. idyja (Geyer) DOXOCOPA, [1828]. In Huebner, Samml. exot. Schmett. 3:pl.[13]. TL - Cuba. Type presumably lost; Geyer's figures considered to represent type. Extralimital: Greater Antilles (Cuba, Isle of Youth [Pines], Hispaniola, Puerto Rico).
 - = padola (Fruhstorfer) DOXOCOPA, 1912. Entomol. Rundschau 29:14. TL - Haiti. STs in ZMHU, Berlin.
 - b. i. argus (H. W. Bates) APATURA, 1864. Entomol. Month. Mag. 1:130. TL - Motagua Valley, Guatemala. HT in BMNH. Central America (SW U.S.A., Mexico, Guatemala, Honduras, Nicaragua). First U.S.A. record: Sonoita Ck., Santa Cruz Co., AZ (NEWS Lepid. Soc. No. 2, Mar/Apr 1991, p.16).

Asterocampa idyja would be species number 701; Asterocampa idyja argus (Bates, 1864) would be 701b.

Tim Friedlander

HER LOVELINESS

T'was not in land of Ecuador
Where I first saw the Philenor;
The Philenor's a swallowtail;
The one I saw I'm sure was male.
In Ecuador I tell you true
I saw a species turquoise blue;
I tell you this without a lie:
In flip-flop pattern she did fly.
She comes from lands of the banana.
You almost could think of Diana.
(This lovely butterfly I've known
Makes South America her home.)
Like Tiger Swallowtail her size,
But does not have the Owl's eyes.
Shining by day and by night hides,
And when she flies she never glides.

She's often high up in the air,
But if her colors you would wear,
In wooded path and by a stream
Her turquoise colors all agleam
She may fly close that you might guess
The species of Her Loveliness.

And, please believe me, this is valid:
She's sometimes placed with the Nymphalid.
I hear she feeds on a legume,
And now perhaps you know of whom
I write this rhyme; now you must know
She is the butterfly Morpho.

Joy Cohen

UTAH LEPIDOPTERISTS' SOCIETY

Despite the problems they have been experiencing, the Utah Lepidopterists' Society is live and well. Last year they began publishing the bulletin Utah Lepidopterist in place of Utahensis which is no longer their publication. John Richards is the editor of Utah Lepidopterist. His address is 10364 S. 360 E., Sandy, Utah 84070. He can be reached by phone at (801) 572-4127. He anticipates publishing four issues in 1991, and welcomes items for publication.

Membership in the Utah Lepidopterists' Society is open to all persons interested in Lepidopterology. Nine meetings are held from September through May and summer field trips

are also often organized. All persons who held membership in 1990 have been granted extended membership for 1991. Anyone interested who is not a current member is invited to join by sending \$5.00 to Larry D. Beutler, Treasurer, 8106 W. Whitman Dr., Magna, Utah 84044.

BUTTERFLIES AND CAREERS

In the spring of 1917, when I was 12, I answered a magazine advertisement by James Sinclair of Los Angeles who offered to pay five cents to seven dollars each for butterflies. Since my parents' farm lay in a valley of the foothills of the Coast Range of Western Oregon, where at the time, but not now, butterflies were abundant, I decided to collect for Mr. Sinclair and become rich. After the necessary equipment was assembled, including forceps which Sinclair sent postpaid for twenty cents—together with his illustrated manual for an additional two dollars, I began to collect.

However, by fall it was evident that, after consulting Sinclair's list, not one of my specimens was worth even five cents. But by then I was hooked on a lifetime hobby.

Although I did not send Sinclair any specimens, many youngsters did and apparently he kept their collections, stating that they were not what he needed and then he later sold them to others. It was reported that Mr. Sinclair later was convicted of mail fraud.

It is ironical that Sinclair must have stimulated in many youngsters an interest in biological science that led to careers. In my case, it led to teaching and research in several areas but especially entomology and parasitology. Unfortunately it is now too late to learn many instances which led from collecting Lepidoptera, initiated by Sinclair, to careers in science.

But recently Dr. Walter J. Breckenridge, retired head of the Bell Museum of Natural History of the University of Minnesota, told me that when he lived in a small Iowa town he answered Sinclair's ad and began collecting butterflies. This led to an interest in birds and to a great career. Dr. Breckenridge made many of the memorable dioramas of Minnesota wildlife in the museum, wrote books, produced fine bird paintings, and for a long time was the national Audubon lecturer.

Lately the University of Minnesota has raised over a million dollars from private donors to establish a distinguished lectureship in his name. It all started with collecting butterflies.

Ralph W. Macy
Portland State University

From The Editor's Desk

June Preston



As Mr. Preston and I prepare for our full summer of collecting, I must also get this issue of the NEWS ready for the printer, although it will be mailed several weeks after we have left Kansas on our annual summer collecting safari. We hope that the summer will be a fruitful one for all of the Society members no matter whether their interests include butterflies or moths, collecting, rearing, photography, just plain bug watching, butterfly gardening or any of the numerous related pursuits. And we look forward to seeing many of you at the Annual Meeting in Tucson.

A month or so ago I phoned Bob Pyle in search of an answer to a question concerning the term "aurellan" in conjunction with lepidopterists. His answer deserves to be shared with the general membership as it contains some fascinating historical tidbits, so I include it here.

Dear June:

In reply to your request for information on the use of the term aurellan with respect to lepidopterists, here is the lowdown:

According to David Elliston Allen (The Naturalist in Britain: A Social History, Penguin, 1978), p. 14, early British entomologists liked to call themselves aurelians after aureolus, "the golden chrysalis of a certain kind of butterfly". My Latin Dictionary (Cassell's, undated) lists aureus -a -um as "made of gold", and aureolus as "golden, glittering, splendid, or beautiful."

The first Society of Aurelians was already flourishing by 1740, and may go back to the late seventeenth century. The likely founder was Joseph Dandridge, a prominent London collector from 1690 on. The group met in The Swan Tavern in Change Alley, where they barely escaped with their lives, losing their collections, regalia, books, and records, in the great Cornhill Fire of March 8, 1747. They never recovered.

Moses Harris, the great entomological illustrator, had joined the club in 1742, at the age of 12. In 1762, he resurrected The Aurelians. One of the members was Dru Drury, a wealthy silversmith and collector in the Strand. What pub they met in, and the rest of their records, did not survive. The group lasted only four years before being "ruined by internal dissension among the members."

Moses Harris published a treatise entitled The Aurelian; or, A Natural History of British Insects in 1765. Ten years later, he published The English Lepidoptera; or, The Aurelian's Pocket Companion (reprinted in facsimile by Eric Classey in 1969). And to this day, a marvelous painting of Harris hangs on the stairway of the Royal Entomological Society of London, labeled "The Aurelian". A third Aurelian Society arose in 1801 and got to the point of publishing a Transactions, but soon lost out to the societies that persist today. A centenary history of the British Entomological & Natural History Society, successor to the old "South London," is entitled The New Aurelians (M. J. James, 1973).

Although these golden oldie butterfly clubs are all extinct, the name was revived in 1978 or so when a small group of Northwest lepidopterists decided to meet informally to work toward future regional projects and books, and to call themselves The Evergreen Aurelians. They gather irregularly at whatever pub is handy.

Robert M. Pyle
Gray's River, Washington

Notices



ICZN

The following application was published on March 26, 1991 in Vol. 48, Part 1 of the Bulletin of Zoological Nomenclature. Comment or advice on this application is invited for publication in the Bulletin and should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Rd., London SW7 5BD, U.K.

Case No.

2748 Plusia falcifera Kirby, 1837 (currently Anagrapha falcifera; Insecta, Lepidoptera): proposed conservation of the specific name.

J. Donald Lafontaine, *Biosystematics Research Centre, Agriculture Canada, Ottawa K1A 0C6, Canada*
Robert W. Poole, *Systematic Entomology Laboratory, U.S. Department of Agriculture, c/o National Museum of Natural History, NHB-167, Washington, D.C. 20560, U.S.A.*

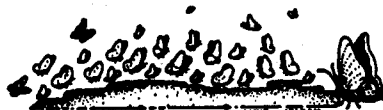
Abstract. The purpose of this application is the conservation of the specific name of Anagrapha falcifera (Kirby, 1837), a North American noctuid moth which is a pest commonly known as the celery looper. The unused name Autographa norma Hübner [1821] is an undoubted senior synonym for this species, as we propose the suppression of Hübner's name norma.

MONARCH BUTTERFLY AS NATIONAL INSECT

A new joint resolution, H. J. RES 200, has been introduced in the 102nd Congress, House of Representatives by Congressman Leon Panetta of Santa Cruz, designating the monarch butterfly as the national insect. The Lepidopterists' Society is among the 74 organizations supporting this resolution. Numerous Garden Clubs, Entomological Societies and Wildlife Organizations are also supporters. Members of the Society who are in agreement with this resolution promoting the monarch should write to their congressmen urging their support and to their senators urging the introduction of a similar resolution in the Senate. For further information contact Douglas W. S. Sutherland, Chairman National Insect Subcommittee, Entomological Society of America, 9301 Annapolis Rd., Lanham, Maryland 20706-3115 or phone (703) 557-2224 days or (301) 345-6119 evenings.

NEEDED! A VOLUNTEER FOR A FASCINATING AND REWARDING TASK

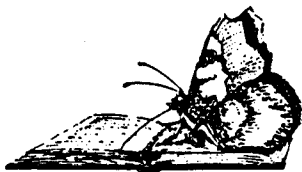
Get to know your Society and active Lepidopterists through correspondence and personal contact. Be in on the decision making processes of the Society as a participant on The Executive Board. Help your Society prosper and grow. The Society is searching for a new editor of the NEWS of the Lepidopterists' Society. The task involves editing articles and a small amount of original writing plus preparation of photo-ready copy for the printer. If you have a flair for editing and would like to help the Society reach out to amateurs and professionals alike, please contact Paul Opler, Editorial Committee Chairman, Office of Information Transfer, US Fish and Wildlife Service, 1025 Pennock Place, Suite 212, Fort Collins, Colorado 80524. Also, after Sept 1, 1991, you may contact June Preston, NEWS Editor, 832 Sunset Dr, Lawrence, Kansas 66044. Further details and the job description are available from both above named individuals.



"Forthcoming Meetings"

LEPIDOPTERISTS' SOCIETY 42ND ANNUAL MEETING

Sonoran Arthropod Studies, Inc and the University of Arizona's Department of Entomology will host the 42nd Annual Meeting of the Society at the Quality Inn University in Tucson, Arizona from Thursday, August 1 thru Sunday, August 4, 1991. The preregistration form and more detailed information appear on page 11 of NEWS #1, 1991. There will be no general mailing of registration forms or call for papers. If you are interested in attending the meeting, please fill out and return the preregistration form IMMEDIATELY. Your registration packet can then be mailed to you. For more information contact Steve Prchal, Sonoran Arthropod Studies, Inc, P.O. Box 5624, Tucson, Arizona 85703, USA, or phone (602) 883-3945.



UTAHENSIS PUBLISHES LEPIDOPTERA OF UTAH CHECKLIST

The Lepidoptera Journal UTAHENSIS has recently published the first comprehensive "Checklist of the Lepidoptera of Utah" by Gillette, Stanford, and Johnson. Species presently covered include 153 butterflies, 47 skippers, and 499 moths. The single issue cost is \$4.00. A subscription of Vol 10 of four issues of Utahensis (which includes Issue 1 — the Checklist) is \$10.00. If interested write to: Col. Clyde F. Gillette, Editor, UTAHENSIS, 3419 El Serrito Dr., Salt Lake City, UT 84109

SOFTWARE REVIEW:

WHERE IN THE WORLD IS *Colotis evagare*?

EUROPEAN BUTTERFLY IDENTIFIER, version 1.0. 1990. A computerized identification system and database designed and written by Dr. George Thomson, author of the Butterflies of Scotland. ID Software, 2 Ravenhill, Lochmaben, Lockerbie, Dumfriesshire, SCOTLAND, DG11 1QZ. £39.95 (single user license) or £30.00 (single user license to educational institutions ordering on official order forms); £150 for unlimited use in one establishment (5 copies and 5 manuals).

System requirements: IBM PC/XT/AT and clones (including Nimbus and Archimedes with MS-DOS emulation); minimum 512K memory; 360K, 720K, 1.2MB, or 1.4MB disk drive or hard disk (requires about 700K of space) or any combination; Hercules, CGA, EGA, or VGA adaptor and monitor (mono or color; runs in monochrome on Hercules and CGA systems); almost any printer (to print species lists).

Identifying an unknown butterfly from books can be a frustrating experience. Most of us try to match the specimen to one of the photographs in a field guide or larger work and then read the species description hoping for a clear match. In fact, this is the procedure recommended in most butterfly identification books, including Butterflies East of the Great Plains (1984) by Paul Opler and George Krizek, The Butterflies of North America (1986) by James A. Scott, both Peterson Field Guides (A Field Guide to the Butterflies of North America, East of the Great Plains [1951] by A. B. Klots and A Field Guide to Western Butterflies [1988] by William Tilden and Arthur Smith), and The Audubon Society Field Guide to North American Butterflies (1981) by Robert M. Pyle.

Often, however, the match to the photograph is ambiguous and the text less than definitive. Field guides rarely have space to describe or illustrate the range of variation to be encountered in many species. Specimens we can't identify ourselves from pictures are often set aside to be sent to specialists, an effective but time consuming way to get an accurate identification. But there is an alternative: use of dichotomous keys.

A dichotomous key is a series of (supposedly) mutually exclusive statements arranged as a branching series of couplets. For example:

1a HW with outer margin tailed or angulate2

1b HW with outer margin rounded.....5

This couplet clearly forces you (the user of the key) to classify your specimen as matching one of two descriptions of the hindwing outer margin. Having chosen either 1a or 1b, you proceed to couplet #2 or #5, respectively, and so on, until the choices lead to a species identification. A well-constructed key is very useful for identifying specimens.

If keys are helpful, why aren't they included in butterfly books? After all, dichotomous keys are used widely in books and monographs on most other insect groups. Only one major work on North American butterflies has included a key to species, How to Know the Butterflies by

Paul and Anne Ehrlich (1961), published as part of the Pictured-key Nature Series developed by H. E. Jaques (the example given above is the opening couplet in the key to the species of *Eurema* from this work). [The Ehrlichs' book also provides keys to families, subfamilies, and genera. Scott's book includes a key to all world families and subfamilies of butterflies, but not to genera and species.]

The absence of keys seems to stem from the general belief that they are unnecessary. The average buyer of butterfly books doesn't care about keys; most butterfly books illustrate species in color, making picture matching relatively easy. The catch word here is "relatively;" although the method works well for some groups, such as swallowtails, it is notoriously difficult for other groups, such as blues and skippers.

Eliminating the uncertainty of picture matching is apparently behind the commercial release of a new series of computer software identification guides being developed in Scotland by George Thomson. The first to be announced (in April 1990) was the European Butterfly Identifier. Future programs (to be available by 1991) will deal in a similar fashion with British birds, European mammals, and British freshwater fish.

The European Butterfly Identifier, a computer program supplied on two 360K 5.25-inch floppy disks, is easy to use, requires no prior computer expertise (only nine computer keys are used throughout the program), and comes with a manual of instruction. Its purpose is to allow the user to identify any of the 392 species of European butterflies (subspecies are not included) by reacting to a series of alternative choices (a dichotomous key) that appears on screen one couplet at a time. My review of this program is based on experience with a demonstration disk that contained data only on the family Pieridae.

At the opening screen the following menu appears:

Identification of families and species

Identification details of close species

Species list

Quit program

A butterfly symbol to the left of these entries can be moved up or down with the cursor control arrows on the keyboard. To choose from the menu, you move the butterfly symbol to the appropriate line and press the return key. Selecting "Identification of families and species" produces a second menu:

Identify family

Select family

If you already know what family your specimen is in, choose "select family" to see a list of 9 butterfly families, including skippers, with both Latin and common names given. Using the cursor, select a family. The next screen gives the number of species in the family in Europe and worldwide, and provides the following menu:

Select species

Identify species

To call up information on a species whose name you know, you choose "select species" and type either the Latin name or the common name. Here the program demands accuracy and precision. It will recognize only the species name, not the genus name. A common name can be entered, but (1) it must be the one recognized by this program (many species have several common names) and (2) the case match must be exact (i.e., you must capitalize the first letter of each word in the common name or the program won't recognize it).

To identify a specimen whose name you don't know, choose "identify species." This brings up the first couplet in the dichotomous key for whatever family you are in. For example, in Pieridae, the first couplet is:

Wgs not pointed

Wgs extended to point + reddish discoidal spot

Whenever necessary, a context sensitive help feature can be called up on screen (fortunately, the help window does not block the part of the screen containing your work) that explains all abbreviations (e.g., "wgs" = "wings"), defines anatomical terms, diagrams the wing areas, and labels the wing venation and wing spaces or cells.

I tried keying out several species using illustrations from Chinery's field guide instead of real specimens. One (*Pieris manni*) worked great. The second (*Anthocharis cardamines*) posed a problem at the point when I was asked

to choose between "discoidal spot prominent" or "not prominent." Given how small the spot is in this species I chose the latter and ended up in a ditch. The program (and Dr. Thomson) obviously thinks the spot is prominent (it is conspicuous, but...); so I stared at the spot long enough for it to look prominent and thus got the program to work by switching my choice. The third species I tried, *Pontia callidice*, the Peak White, eluded all my efforts to capture it (I spent over 30 minutes chasing it with the digital equivalent of a butterfly net). No matter how many ways I tried using the key, I could never make it identify this species correctly.

Whether a species is identified using the key or whether its identity is already known, you can call up detailed information about it with a single keystroke. Here is the entry for the Peak White (obviously, I called this up by typing in the species name, not by keying it out!):

Peak White
Pontia callidice HUBNER 1805
 Late June to end August
 High Alpine area from 2000m
 on grass
 Pyrenees and Alps to Asia, the
 Himalayas and North America
 cf *napi*

Accompanying this information is an on-screen range map that uses shaded areas to show the known distribution of the species in Europe. Europe, as defined in this program by the borders of the range map, covers an area from 35° West Longitude (to include all of Iceland) to 42° East (to the eastern edge of the Black Sea), and from 33° North Latitude (roughly along a line from Casablanca to Damascus) to 72° North (to encompass the northern coast of Norway). Because I received no manual with the demonstration disk, I am unsure what "on grass" means (habitat? host plant?), but the other entries are self-explanatory. "cf *napi*" refers to the similarity between these two species, which leads to a very useful feature of the program. To compare a species with others similar to it (regardless of family), you go to the opening menu and choose "identification details of close species" (I wish Dr. Thomson had used "similar species" rather than "close species," because this aspect of the program allows comparison of species that look similar but may not be related). When I asked for species that looked similar to *Pontia callidice*, I got a list of six species, each with a sentence or two describing them. Unfortunately, some of the descriptors were ambiguous, such as "usually larger" or "usually smaller," but, overall, the comparison of all similar species on a single page (=screen) is one advantage this computer program has over a book, in which you must flip through many pages to compare descriptions of look-a-like species.

Although the full program allows you to identify the family of an unknown specimen using a family-level key, I was unable to test this because the demonstration disk contained data only for Pieridae.

Other features of the program include an ability to backtrack through previous choices when using the key (helpful if you realize you've made a mistake or if the next couplet turns out to be totally inappropriate for your specimen) and the ability to display and print a list of all species in each family (arranged in phylogenetic order by genus).

The only error I found on the demonstration disk was the misspelling of *Colotis* (as *Colotois*). And although I was impressed that the program includes *Colotis evagore* (Michael Chinery's recently published field guide, *Butterflies and Dayflying Moths of Britain and Europe*, 1989, omits it), I was surprised at the confusing way that the range of this species is presented. In Europe, *Colotis evagore* occurs only in the Sierra Nevada mountains in southern Andalusia in Spain. The range map shows a dot there, but in the on-screen text the range is given simply as "Africa and South Arabia."

Most of us who spend a lot of time staring at computer screens will probably welcome this software program, if only because it provides an excuse to work with butterflies and computers at the same time. Now, if we could just convince Dr. Thomson to produce a software guide to the butterflies of North America! On the other hand, he is

a nice man, and I would hate to inflict our nomenclatural chaos on him. How would he ever deal with the plethora of common names for our 679 species, let alone the generic confusion resulting from the Miller/Brown checklist, or the scads of subspecies we westerners are so proud of? As a fellow Scot, I say "Nae, laddie, gang warily."

Boyce A. Drummond
 Natural Perspectives
 Woodland Park, CO



New Members



- ANDERSON, ERLE: 2400 Bradford Bay Road, Alexandria, MN 56308.
 BALLENGER, C. E., III: 521 Hancock Street, New Bern, NC 28560.
 BORCHARDT, MARTHA: 811 Harrison Avenue, Beloit, WI 53511.
 BROWN, NEIL: 3741 5th Avenue, San Diego, CA 92103.
 CLAPP, ROBERT: 412 Walnut Street, P.O. Box 371, Boiling Springs, PA 17007.
 DOBEL, ROBERT: 1876 Kemmer Road, Manistee, MI 49660.
 EIDE, MARDENE: P.O. Box 6, Silver Bay, MN 55614.
 GENTILI, PATRICIA (Dr.): Systematic Entomology Lab, USDA, c/o National Museum of Natural History, NHB-168, Washington, DC 20560.
 GREGORY, BEN M., Jr. (Dr.): Dept. of Entomology, 402 Life Sciences Building, Louisiana State University, Baton Rouge, LA 70803-1710.
 HANSEN, LARS OVE: Sparavollen 23, N-3021 Drammen, NORWAY.
 HERBIN, DANIEL: 53 Allee des Platanes, F-31320 Pechabou, FRANCE.
 JASMIN, CLAUDE: 31 Ch. de la Tournee, Lac Beauport, Quebec GOA 2C0, CANADA.
 McCOTTER, GEORGE: 106 Aikahl Loop, Kailua, HI 96734.
 MEDINA, MIRIAN: Universidad Nacional Mayor de San Marcos, Casilla 14-0434, Av. Arenales 1256, Lima 14, PERU.
 MILLER, KENDRICK: 495 Larsen Road, Aptos, CA 95003.
 MOODY, ERIC: 100 Crescent Street, Auburndale, MA 02166-2510.
 NICE, CHRIS: Dept. of Zoology, University of California, Davis, CA 95616.
 PANGEMANAN, NORRIS J.: P.O. Box 33g, Tembapapura, Irian Jaya, INDONESIA.
 POOLE, ROBERT W. (Dr.): Systematic Entomology Lab, USDA, c/o National Museum of Natural History, NHB-168, Washington, DC 20560.
 RACHELI, TOMMASO: Via Guiseppe Valmarana 66, I-00139 Rome, ITALY.
 RICH, MARK: 811 Harrison Avenue, Beloit, WI 53511.
 SCHLOEMER, JERRY: P.O. Box 307, Round Lake, IL 60073.
 SELSER, ERMA: 164 Lincoln, Galesburg, IL 61401.
 SMITH, ANDREA L.: Rural Route 04, Box 220, Franklin, IN 46131.
 STIRN, BRADLEY A.: 590 Albion Avenue, Woodside, CA 94062.
 SWEET, VICTOR A.: Rural Route 03, Box 420, Pocola, OK 74902.
 VASCIK, MICHAEL LAWRENCE: 10740 Maumee Western Road, Swanton, OH 43558.

Address Changes



- BORDELON, CHARLES: address in 1990 News #2 was incorrect; correct address is: 150 North 7th Street, Beaumont, TX 77702.
 ELLIS, BRUCE: P.O. Box 38023, Cleveland, OH 44138-0023.
 HANAFUSA, HIROTO: 1078 Yoshinari, Tottori City 680, JAPAN.

MACK, RONALD G., Jr.: Survey Entomologist, Pest Management Office, 491 College Ave., Orono, ME 04473.
 PURDUM, DAVID A.: 5232 Roselawn Road, Roanoke, VA 24018-4134.
 SEABOLT, THOMAS: P.O. Box 13133, Dinkytown Station, Minneapolis, MN 55414-5133.
 VILLA, ROBERTO: Via Dei Coltellini 6, I-40122 Bologna, ITALY.
 WEISS, LISA: 255 Amherst Ave., Kensington, CA 94708.

The Market Place

Buy • Sell • Exchange • Wants



Items submitted for inclusion in this section are dealt with in the manner set forth on page 9 of the Jan/Feb 1991 NEWS. Please note that in keeping with the guidelines of the Society, henceforth no mention of any species on any threatened or endangered species list will be accepted in these items. This will include all Ornithopterans now and for the foreseeable future. Items will be accepted from members only and will be printed only once unless entry in the maximum of two successive issues is requested. Please keep items short. A maximum of 100 words is allowed. SASE in an ad stands for self addressed stamped envelope.

The Society, as always, expects all notices to be offered in good faith and takes no responsibility for the integrity of any advertiser. Any disputes arising from such notices must be resolved by the parties involved outside of the structure of the Society.

EXCHANGE — Leps from Texas for Leps in your area. Contact Charles Bordelon, 150 N 7th, Beaumont, Texas 77702.

FOR SALE OR EXCHANGE: Butterflies from Iran, mostly 1989-90 common specimens, including *Parnassius* and *Iphichlides*, by a new member. Wazrik Nazary, Narmak, western 46 meters, 92nd square, Barati Ave. No. 33, Tehran, Iran.

WANTED: "Butterflies of the Oriental Region," Vol. 4, Part 1 by Bernard D'Abbrera. Please send letter stating condition and price to Bob Gondek, 11164 Marsha Place, Warren, Michigan 48089, U.S.A., or phone (313) 758-6499.

AVAILABLE FOR TRADE: (15) *Collas nastes*, (1) *Oeneis chryxus*, (9) *Occidryas editha*, (12) *Clossiana bellona*, (5) *Clossiana selene*, (3) *Parnassius clodius*, (4) *Speyeria atlantis*, (5) *Clossiana freija*. All were collected in 1989 in the foothills and Rocky Mountains of Alberta. All are in glassine envelopes. I am interested in *Speyeria diana* and other *Speyeria* and Swallowtails of North America. Or any N. American Butterflies. Robert C. Ipema, #402, 1820 12 Ave. SW, Calgary, AB T3C 0R6, Canada.

ATTENTION LIFE HISTORY ENTHUSIASTS!!! If you are interested in rearing California butterflies of the families *Papilionidae*, *Pieridae*, *Danaidae*, *Satyridae*, or *Nymphalidae*, or simply want the adult specimens, please read on. I can provide (or will attempt to get) either ova, larvae, pupae, or perfect imagoes of just about any butterfly from the above families that is resident in California, as well as many others that occur in neighboring states. In exchange, I would like eggs ONLY of selected butterflies from your area that are in these families. Keith Wolfe, 616 Alumrock Drive, Antioch, California 94509; home phone: (415) 778-8757.

FOR SALE: About 200 volumes from my library, including entomology, other natural history, heredity, evolution, developmental biology. SASE (business size envelope, please) to Dr. Jack N. Levy, D-440 Med. Sci. I, Dept. Pathology, Univ. California, Irvine, CA 92717.

FOR SALE: ova of *H. cecropia*, *A. polyphemus*, *A. luna*, *H. columba* and *C. prometha*. Also, literature on how to rear them. Papered specimens available in each of these species. Limited supply of cocoons available of the above species to be shipped on a first received basis. Send SASE for price list to: Dr. Gardner E. Gregory, Star Route 79, Box 259, Orland, Maine 04472.

FORSALE: Light Traps, 12 volt DC or 110 volt AC with 15 watt or 8 watt black lights. The traps are portable and easy to use. Rain drains and beetle screens protect specimens from damage. For a free brochure and price list contact: Leroy C. Koehn, 2946 N.W. 91st Ave., Coral Springs, FL 33065.

WANTED: Back issues of "Papilio International" journal. Photo copies acceptable. Will purchase or trade for specimens. ALSO WANTED: Live or preserved pupae (or exuviae) of papilionids from Indo-Australia region, South America or Europe. FOR EXCHANGE: I will have fresh specimens of *P. aristor*, *Gr. zonaria* & *P. machoanides* from the Dominican Republic. Will exchange for papered specimens of *Gr. meeki*, *Gr. mendana*, *P. godefroyi* or *P. schmeltzii*. M. Schenck, P.O. Box 3244, Newport, Rhode Island 02840, U.S.A.

WILL EXCHANGE: Beetles and other insects from Spain for same from North America. Contact James C. Banks, Site 87, Box 82, RR #1 Bedford, Nova Scotia B4A 2W9, Canada.

FOR SALE OR EXCHANGE: Hybrid ova of *Eacles psilari* (Mexico) x *imperialis* (Florida) and/or *E. imperialis* x *psilari*. Available July/August. Please indicate quantity and preference. Daniel Sblendorio, 13 Highview Circle, Middletown, NJ 07748. Phone (908) 957-9679.

WANTED, COCOONS OF THE FOLLOWING USA SATURNIIDAE: *C. securifera* (both broods), *Rothschildia forbesi*, *B. cincta cincta*, *B. orizaba*, *Anthera polyphemus olivea*, *Eupakardia calleta*, *Hyalophora gloverii reducta*, *H. gloverii nokomis*, *Agapema galbina*, *A. homogena*, Any *Saturnia* spp., *Automeris randa*, *A. iris*, *A. cecrops pamina* & *A. zephyria*. Also interested in papered specimens of the above. Will purchase or trade. Call Ira Nadborne, Collect (212) 942-5721 and identify yourself as a Lep. Soc. member (11 a.m. to 3 p.m. EST) or write to 1793 Riverside Drive, Apt. #2 I, New York, New York 10034.

FOR SALE: 12-drawer Cornell style insect storage cabinets, with drawers. Locking handle, door seal; olive green. Drawers 16 1/2 x 19 x 3"; tight, with hooks and knobs; clear lacquer finish. Well-used but good condition. Good price, quantity discount for all or large part of the 35 cabinets. For more information and prices phone (415) 723-5924 from 9 to 5 PST. Ask for Kathy Switky.

MEMBERS' COMMERCIAL NOTICES.....

I. R. WILLEM, P.O. Box 1625, Margate 4275, SOUTH AFRICA. FOR SALE: Largest selection of South African beetles incl. *Trichostetha*, *Hypselogeniageotrupina*, *Eudicella euthalia natalensis*, *Amaurodes passerini rufotibialis*, ANTHIA sp., MANTICHOA sp., Cerambycidae. Also multicolored rainbow grasshopper *Maphyetus leprosus*. Butterfly assortments. *Charaxes ethalion*, *Papilio dardanus cenea* plus rare material on special request.

MIGUEL SERRANO-TROPICAL BUTTERFLIES OF AMERICA, 6823 Rosemary Drive, Tampa, Florida 33625. Specializing in rare and beautiful butterflies especially from Tropical America with pairs of Central American *Papilio* and *Anaea*. We also have fine specimens from the Indo-Australian and Oriental region. Please send \$2 for lists, including colored illustrations.

WORLDWIDE LEPIDOPTERA SUPPLIES, Len Hart, 40 East View, Boldon Colliery, Tyne & Wear, NE35 9AU, England. For Sale Large selection of Butterflies, Moths & Beetles from worldwide sources. At very competitive prices. Exchanges also welcome. When writing please state your interests as several separate lists available. Send \$5.00 cash for one year's subscription.

E. W. CLASSEY Ltd., P.O. Box 93, Faringdon, Oxon SN7 7DR, England. Telephone: 011 44 36782 399 (24 hour answerphone); Fax: 011 44 36782 429. Cables: "BUGBOOKS" Faringdon, Oxon, England. International mail order Entomological Book Suppliers since 1949. We specialize in Lepidoptera books from throughout the world. Many important Lepidoptera titles are available only from us. We issue regular FREE catalogues of new and second hand & antiquarian books supplemented by occasional special lists. Ordering and payment is simple. Phone, Fax or write for our latest catalogues and Lepidoptera special list.

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DEADLINES: Material for the Jan/Feb issue should reach the NEWS EDITOR by Dec 1 of the previous year, and that for the Mar/Apr Issue by Feb 15, for the May/June issue by Apr 1 and for the July/Aug issue by May 1, the Sept/Oct issue by Aug 15 and the Nov/Dec issue by Oct 15. Reports for the SEASON SUMMARY must reach the ZONE COORDINATORS listed on the front cover no later than the 5th of January. NEWS EDITOR is June Preston, 832 Sunset Dr, Lawrence, Kansas 66044-2373, USA. Phone (913) 843-6212. RIPPLES EDITOR is Jo Brewer, 257 Common St, Dedham, Massachusetts 02026-4020, USA.

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INFORMATION ABOUT THE SOCIETY.....

Membership in the Lepidopterists' Society is open to all persons interested in any aspect of Lepidopterology. Prospective members should send the TREASURER, Fay H. Karpuleon, 1521 Blanchard, Mishawaka, Indiana 46544, USA, phone (219) 258-4893, the full dues for the current year, \$25.00 US, together with mailing address and a note about areas of interest in the Lepidoptera; student membership (must be certified) \$15; sustaining membership \$35; life membership \$500. Remittances must be in US dollars, payable to the Lepidopterists' Society. All members will receive the JOURNAL (published quarterly) and the NEWS (published bimonthly). A biennial membership directory will comprise the last issue of the NEWS in even-numbered years.

Changes of address (permanent ones only), Additions or Changes in Telephone Numbers or Areas of Interest and Information about Mailing List Rental: Contact the ASSISTANT SECRETARY, Julian P. Donahue, Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California 90007-4057, USA.

Information on Membership and other aspects of the Society must be obtained from the SECRETARY, Dr. William D. Winter, Jr., 257 Common Street, Dedham, Massachusetts 02026-4020, USA. Home phone (617) 326-2634.

Requests for Missed Issues (i.e. those not delivered although dues have been paid on time) should be sent to the TREASURER, Fay H. Karpuleon, address above, or the PUBLICATIONS COORDINATOR, Ron Leuschner, address below. Defective issues will also be replaced by the TREASURER. Do not request these of the NEWS editor.

Manuscripts submitted for publication in the JOURNAL are to be sent to Dr. Boyce Drummond, EDITOR, JOURNAL of the Lepidopterists' Society, Natural Perspectives, P.O. Box 9061, Woodland Park, Colorado 80866-9061, USA. Phone (719) 687-6596. See the inside back cover of a recent issue of the JOURNAL for editorial policies.

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AVAILABLE PUBLICATIONS OF THE SOCIETY..... Order from the PUBLICATIONS COORDINATOR, Ron Leuschner, 1900 John St., Manhattan Beach, CA 90266-2608 USA.

CATALOGUE/CHECKLIST OF THE BUTTERFLIES OF AMERICA NORTH OF MEXICO (Memoir #2), Lee D. Miller and F. Martin Brown: includes references to original descriptions and location of type specimens. Members and subscribers, \$12 cloth, \$7 paper; non-members, \$19 cloth, \$10.50 paper, postpaid.

SUPPLEMENT TO THE CATALOGUE/CHECKLIST OF THE BUTTERFLIES OF AMERICA NORTH OF MEXICO (Memoir #3), Clifford D. Ferris, editor. General notes, plus corrections and additions to the original Memoir #2. Members and subscribers: \$6.00 postpaid; \$7.50 first class in USA or \$9.00 airmail abroad. Non-members: \$10.00 postpaid; \$11.50 first class in USA or air post to Canada.

COMMEMORATIVE VOLUME, 1947-1972: a 25-year review of the Society's organization, personnel, and activities; biographical sketches; JOURNAL 25-year cumulative index by author, subject, and taxon; clothbound. Members and subscribers, \$8; non-members, \$12, postpaid.

1990 MEMBERSHIP DIRECTORY (current to October 1990. Biennial directory of members and their addresses, with geographic and interest indices. Not available for commercial use. (NEWS #6 for 1990). \$5.00 postpaid.

BACK ISSUES of the JOURNAL and of the NEWS of the Lepidopterists' Society. For a list of the available issues and their cost, postpaid, send a SASE to the SECRETARY or to the PUBLICATIONS COORDINATOR.