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The Southern Illinois University at Carbondale Ichthyological Research Collections

Brooks M. Barr

Melvin L. Warren Jr.

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Collections

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MUSEUM NOTES

The Southern Illinois University at Carbondale Ichthyological Research Collections

Brooks M. Burr and Melvin L. Warren, Jr.

Department of Zoology
Southern Illinois University
Carbondale, IL 62901-6501

HISTORY

The Southern Illinois University at Carbondale ichthyological research collections (standard symbolic code=SIUC, Leviton et al., 1985; address correction in Leviton and Gibbs, 1988: 282) began in 1977 when the first author and curator was hired by the Department of Zoology. A small teaching collection was then available for ichthyology and fisheries courses; however, it was limited in scope, and many specimens were dehydrated and subsequently discarded.

Collections made in the late 1970s were not catalogued initially (they have been subsequently). Early collecting in earnest began in order to obtain adequate distributional information on Kentucky fishes, and the collection subsequently grew dramatically in size. From these collections it was discovered that a number of species had not yet been recorded formally from Kentucky and at least 10 unnamed Kentucky species awaited taxonomic description. Also, during this period (late 1970s), regular collections were taken from the Mississippi River and the Ozark Uplands of Missouri. Early on, space limitations became apparent and large series of common species (e.g., common carp, creek chub, bluntnose minnow, central stoneroller, green sunfish, bluegill) were not desirable and have either been discarded or donated to other institutions.

Previous to 1981, the collection was maintained in a relatively small room, but was thereafter moved to one of the largest laboratories (470 square feet) in the department. The collection is officially part of the Department of Zoology and currently is housed in a modern facility (Life Science II Building) completed in 1970 and located on Lincoln Drive on the SIUC campus. The collection is open from 8:00 to 5:00 Monday through Friday, but advance notice of visits is appreciated.

In 1977, a program was initiated on the life histories of nongame fishes, and all collections made in association with this research are now deposited in the SIUC fish collection. To date, the life history program has resulted in extensive series of specimens representing most life stages of 22 species [Cyprinidae: *Notropis* (2); Ictaluridae: *Noturus* (9); Fundulidae: *Fundulus* (1); Elasmobranchidae: *Elasmobranch* (1); Percidae: *Etheostoma* (7), *Percina* (1); Cottidae: *Cottus* (1)]. Seven students have received Master's degrees from autecological research on these fishes. Annual field trips with ichthyology classes and numerous, extensive trips throughout the eastern United States to obtain critical material for doctoral dissertations has added significantly to the diversity and abundance of preserved and frozen fish collections. A small cleared and stained collection was begun in 1981, and an osteological collection was initiated in 1985.

Commencing in 1978, and thus contemporaneous with the beginning of the SIUC fish collection, was the extensive drainage surveys of Kentucky fishes (Harker et al., 1979; Harker et al., 1980; Harker et al., 1981; Hannan et al., 1984) coordinated by the second author under the auspices of the Kentucky State Nature Preserves Commission (KNPC). In 1981, the entire KNPC collection of fishes was transferred to SIUC. Although it took several years to sort and catalog this material (with material still coming in), these collections effectively tripled the size of the SIUC collection. As a result, the collection now contains representatives, and in most cases extensive series from all major drainages, of all native Kentucky fishes including many voucher specimens of species otherwise unknown from the state. Major independent collecting surveys to coastal North Carolina (1983-84) and New Mexico (1990-91) and contract surveys in Alabama (Warren and Burr, 1990), North Carolina (e.g., Burr and Lee,

1985), Kentucky (Warren and Burr, 1990; Warren and Burr, 1991), and Illinois (e.g., Phillippi et al., 1986; Burr and Warren, 1987; Warren and Burr, 1987; Warren, 1991) over the period of 1983-1991, plus additional smaller collections have contributed immeasurably to the geographic coverage of the collection. Many other collections have resulted from the long-term goal of producing a new "Fishes of Kentucky" (Burr and Warren, manuscript) and the continuous updating of "A Distributional Atlas of Kentucky Fishes" (Burr and Warren, 1986). Exchanges with colleagues in Japan and China have yielded a variety of Asian cyprinids and catfishes and even a *Psephurus gladius*! A large collection from Brazil donated by a former graduate student (Thomas E. Shepard) yielded an array of neotropical species. Contacts with commercial fishermen and fish biologists in both Kentucky and Illinois have provided significant distributional records for several riverine fishes. In recent years, tissues, extracts, and whole animals have been accumulated and maintained in ultrafreezers for use in molecular systematic studies.

HOLDINGS

The bulk of the material in the collection is representative of the freshwater fishes of the eastern United States. For example, we have over 5,000 lots of cyprinids representing 203 species; 3,500 lots of percids representing 125 of the 165 known species; 800 lots of *Noturus* representing 23 of the 27 species; and 2,000 lots representing 29 of the 31 species of centrarchids. The collection is used extensively by SIUC faculty and students, and many colleagues and agencies request loans, distributional records, color transparencies, and other data associated with the collections. Over 80 published papers and agency reports are based, in part, on specimens deposited in the SIUC ichthyological collection. Since 1980, over 60 fish loans or gifts have been processed amounting to over 6,000 specimens.

In Illinois, the SIUC collection is the largest university collection and the third largest in the state after the Field Museum of Natural History and the Illinois Natural History Survey. It currently contains 20,880 catalogued lots and 250,000 specimens representing 175 families, 465 genera, and 1,120 species of freshwater and marine fishes. The cleared and stained collection contains 29 species in 30 lots (mostly darters); the osteological collection is represented by 18 species in 100 lots (mostly sunfishes). Paratypes of the following 20 species are represented: *Campostoma pauciradii* Burr and Cashner (4 lots), *Luxilus cardinalis* (Mayden) (1 lot), *Notropis cahabae* Mayden and Kuhajda (1 lot), *Notropis rupestris* Page (1 lot), *Fundulus bifax* Cashner and Rogers (1 lot), *Etheostoma baileyi* Page and Burr (1 lot), *Etheostoma barrenense* Burr and Page (1 lot), *Etheostoma brevirostrum* Suttkus and Etnier (1 lot), *Etheostoma chermocki* Boschung, Mayden, and Tomelleri (1 lot), *Etheostoma chienense* Page and Ceas (1 lot), *Etheostoma corona* Page and Ceas (1 lot), *Etheostoma crossopterygion* Braasch and Mayden (1 lot), *Etheostoma flavum* Etnier and Bailey (10 lots), *Etheostoma*

nigripinne Braasch and Mayden (1 lot), *Etheostoma oophylax* Ceas and Page (1 lot), *Etheostoma pseudovulatum* Page and Ceas (1 lot), *Etheostoma pyrrhogaster* Bailey and Etnier (1 lot), *Etheostoma rafinesquei* Burr and Page (1 lot), *Etheostoma tallapoosae* Suttkus and Etnier (1 lot), and *Etheostoma zonistium* Bailey and Etnier (1 lot). We currently maintain no primary types.

At present the frozen tissue collection contains geographic samples of several cyprinids (mostly *Lythrurus* and barbeled minnows), centrarchids (mostly *Lepomis*), percids (mostly *Etheostoma*), and cottids; frozen tissues are available for loan or exchange.

A unique aspect of the SIUC collection is the 2 x 2 color transparencies representing many specimens deposited in the collection. Nearly all species of North American darters (143 species), minnows (165 species), suckers (50 species), catfishes (32 species), and sunfishes (23 species) are included as well as numerous representatives of most of the other North American fish families. [A duplicate set of most of the fish slides also is maintained by Larry M. Page, Illinois Natural History Survey, Champaign]. We maintain the largest (over 3,000) collection of 2 x 2 slides of the history of ichthyology anywhere in the world, including pictures of nearly every prominent ichthyologist in North America and many others from around the world. In addition, slides of title pages and color plates from the classic works in natural history, some dating back to the 17th century, are part of the history of ichthyology slide set. [A duplicate set of historical slides also is maintained by Walter R. Courtenay, Jr., Florida Atlantic University, Boca Raton]. Also associated with the collection are numerous radiographs, over 8,000 catalogued reprints, sets of a number of journals, and several hundred fish books.

CURATION

Growth of the collection varies from year to year depending on the activities of the curator and students but in recent years has averaged about 7,500 specimens or 5% per year. Specimens are stored in 70% ethyl alcohol in either glass jars with polypropylene lids; "ball" jars with rubber gaskets; "canning" jars with metal, screw-top lids; or stainless steel containers. Most of the jars are housed on nearly 2,000 square feet of open shelving or in metal cabinets in approximate phylogenetic order by family (sensu Nelson, 1984). Within a family, entries are shelved in alphabetical order by genus and within a genus by species. Species are further subdivided by state in separately labeled boxes. Collection data are maintained in file cabinets on "sorting sheets" by country, state, and county. Each sheet contains the zoological names of the species captured at a given site with catalog numbers, common and legal (if available) locality data, name(s) of collector(s), date, habitat notes, and other notations. None of the collections associated with the ichthyology program are presently computerized. Computerization of the collections is a priority, but it must await adequate funding and assignment of appropriate

personnel. A moderate backlog of material from the Missouri River drainage, Kansas; the Green and Cumberland river drainages, Kentucky; and a number of drainages of eastern Kentucky remain to be sorted and catalogued.

SUMMARY

Although the SIUC collection is small relative to those of institutional museums, we are pleased with the extent of use of the collections by colleagues, with the interest that former graduate and ichthyology students have shown in adding to the collection, and with the support of the Department of Zoology in providing space, supplies, and student workers. In the future we hope to computerize the collection records, increase the size of the specimen preparation area, incorporate fire protection, and decrease light exposure to the storage shelves. A 38-page list of all fishes in the collection, with numbers of lots, specimens, and general location (by state or country) indicated, is available from BMB. We encourage loans, exchanges, and visits; please address queries to BMB.

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Present Address (MLW): USDA Forest Service, Southern Experiment Station, Forest Hydrology Laboratory, Oxford MS 38655

MINUTES

Business Meeting 18th Annual Meeting Southeastern Fishes Council

The Southeastern Fishes Council met 9 April 1992 in the Wilson Room of the Paul W. Bryant Conference Center on the campus of the University of Alabama, Tuscaloosa. The meeting was called to order at 5:30 PM local time.