

## ODONATOLOGICAL HISTORY IN MICHIGAN – 1875-1996

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### ABSTRACT

The history of the study of Odonata in Michigan is documented from 1875 to 1996. The early biological surveys from 1900 to 1920 were privately financed, and enabled biologists to collect and catalog the fauna of the most remote parts of Michigan's Upper Peninsula. The University of Michigan Biological Station at Douglas Lake started in 1908 and became an early base for Odonata studies and continues to do so today with undergraduate and graduate studies at the Station. A series of collectors are profiled from the past century, as well as the roles played in the study of Michigan's Odonata fauna by prominent odonatologists such as E. B. Williamson, E. M. Walker, C. H. Kennedy, and L. K. Gloyd. The 1958 E. J. Kormondy catalog of Michigan Odonata established a baseline for future workers and by 1996 the Michigan Odonata Survey began cataloging and documenting the state's Odonata fauna, which is where this historical account finishes.

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In 2004, the Michigan Entomological Society celebrated its 50<sup>th</sup> anniversary. In commemoration of this event, members and attendees at the annual meeting were encouraged to write manuscripts summarizing Michigan histories on their areas of expertise. For me, the choice was fairly obvious, as I work at the institution that holds one of the largest collections of Odonata and related documents in the Western Hemisphere. The historical efforts of collecting, describing, and cataloging the Odonata fauna of Michigan started not long after our state celebrated its 50<sup>th</sup> birthday. We should not forget the pioneering efforts that began over 100 years ago, and appreciate the obstacles that were in the way of all aspects of such entomological endeavors.

Michigan's location within the Great Lakes and its diverse habitats has made it an interesting collection destination since the late 1800s. The abundance of wetlands, streams, lakes, and rivers throughout the state certainly promises great habitats for Odonata and other aquatic insects. We tend to forget today that much of Michigan's Lower Peninsula was logged by 1900, and as a result many of the early surveys were conducted in areas of Michigan's Upper Peninsula such as Isle Royale, the Porcupine Mountains, and Gogebic County, where the landscape had been less ravaged by loggers. Although a century of reforestation has now taken place, the landscape we see today bears only a vague resemblance to pre-logging conditions (Dickmann and Leefer 2003). Nonetheless, early surveys were launched to explore the more remote areas of the state. At that time, such surveys required sponsors and lasted many months, with transportation provided by railroad, steamship, and horses. After the arrival of the automobile, collecting trips were somewhat less of an ordeal, and biologists began surveying various parts of the state on an ad-hoc basis. The introduction of major highways further aided field work. After the Mackinac Bridge was completed in 1957, the Upper Peninsula became more easily accessible to collectors from the south. Still, it would be another 50 years before a reliably accurate view of Michigan's Upper Peninsula Odonata fauna would emerge.

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**Before 1900.** The earliest records from Michigan appear to be in Hagen's *Synopsis of the Odonata of America* (Hagen 1875). Eighteen species were listed; 16 for "Detroit, Michigan" and two for "Lansing, Michigan." Hagen did not indicate who collected the specimens he examined, nor when they were obtained. The earliest collections for which there were specimens associated with locality data are from those made by David S. Kellicott (1842-1898), a naturalist from Ohio who published many early papers on Ohio dragonflies as well as papers on other insects, rotifers, and protozoa. Kellicott visited Corunna, Michigan, in July-August 1893, and published a short paper in *The Canadian Entomologist* (Kellicott 1894). His list of 44 species from Shiawassee County has not yet been improved upon by the 29 species that are currently cataloged in the Michigan Odonata Survey (MOS) database. Kellicott was also a friend of Edward Bruce Williamson (1877-1933) and Clarence H. Kennedy (1879-1952), who would figure prominently later as Odonata specialists in Michigan. It is unknown where the specimens that Kellicott collected were deposited, or even if they still exist.

The United States Fish Commission collected along the Great Lakes in 1897-99, and there are four larval Odonata specimens in the University of Michigan Museum of Zoology (UMMZ) preserved in ethanol, taken in Presque Isle County in August 1899. These are the oldest Odonata specimens I have personally seen from Michigan, which is all the more surprising, considering they are preserved in ethanol.

**1900 to 1920.** An obscure note in *Entomological News* in 1904 reported that Morgan Hebard from Philadelphia (whose family owned extensive tracts of forest in the Upper Peninsula) had collected a specimen of *Aeshna sitchensis* Hagen in Pequaming, near L'Anse in Baraga County, which represented the first record of that species for the United States (Skinner 1904). Hebard was a noted Orthopterist, and had been collecting Orthoptera in Baraga County. In Hebard's 1910 paper, he wrote "During the summer of 1903, while doing general entomological work at Pequaming, Baraga Co., Michigan, I made an effort to collect a representative series of the Odonata of that region." All of his 19 species were identified by Philip P. Calvert, among the most highly respected of early North American entomologists.

Finally, some in-state people started making contributions to the study of Michigan Odonata. Geological and biological surveys of the western US and the Great Lakes region became popular as scientific endeavors to catalog the flora and fauna as well as determine the potential value of mineral/ore deposits, forests and fisheries. The Michigan Geological and Biological Survey, influenced by the prominent Charles C. Adams (1873-1955), published a number of works on surveys of Isle Royale, the Porcupine Mountains, and other biologically and geologically interesting regions of Michigan. However, it should be pointed out that many of these surveys were not financed by the State of Michigan, but by prominent amateur naturalists who were bankers, physicians and lawyers (Van de Water 1977). The first of these trips was to Isle Royale and the Porcupine Mountains in the summer of 1904. Alexander G. Ruthven (1888-1971), a herpetologist, collected 13 species of Odonata from the Porcupine Mountains, with all identifications made by E.B. Williamson (Ruthven 1906). Detroit businessman and malacologist Bryant Walker (1856-1936), and two prominent Marquette businessmen, Peter White (1830-1908) and H. M. Kaufman sponsored the trips to these two areas, with a second visit in 1905 sponsored by Walker and White.

Adams acknowledged many people for the 1905 Isle Royale trip, including lighthouse keepers on Isle Royale, various railways, steamship lines, the U.S. Weather Bureau, and others that assisted the naturalists on their journey (Adams 1909). One probable route to Isle Royale from lower Michigan would have involved travel by train from Ann Arbor to Mackinac City, across the Straits of Mackinac by ferry, then by train to the Keweenaw, followed by a boat to Isle Royale. It's also possible that the party traveled by rail to Duluth, MN

and took a ship to Isle Royale, or returned that way, as Adams (1909) thanked the caretaker of the Washington Club (Duluth, MN) for use of their grounds. Such expeditions obviously required careful planning. The letter of transmittal from Alfred C. Lane, State Geologist, to the Honorable Board of Geological Survey of the State of Michigan (Adams 1909) states that the contributions come from the University of Michigan Museum and that explorations were made without expense to the State Survey by means of contributions from friends of the Museum. This serves as further evidence of the involvement of private contributors and the UMMZ (referred to as the "University Museum" in the letter of transmittal).

Adams (1909) indicated that H. A. Gleason (of later botanical fame) collected most of the specimens that accounted for 17 species of Odonata from Isle Royale, with some taken by Adams and "other members of the party." Most of them were identified by E. B. Williamson. However, a letter from E. M. Walker to Adams (21 September 1912) indicates that there were some errors in the text, and Walker wrote that he could have identified the *Aeshna* specimens that Adams had left as "*Aeshna* species?" in the text.

In the Shiras Expedition to Whitefish Point, Chippewa County, 29 July - 31 August 1913, only 10 Odonata species were listed (Hankinson 1915). Some of the useful contributions of Hankinson's paper are the documentary photographs of the various habitats around Whitefish Point, made nearly a century ago. That expedition was sponsored by George Shiras III (1859-1942) of Marquette, Michigan, and of photographic fame. Insects, and especially Odonata, were often secondary in importance to vertebrate and plant collections on early expeditions, if only because there were fewer entomological experts at the time. Nonetheless, these early collections remain valuable contributions to the MOS data files, and the specimens are the earliest physical records from Michigan's Upper and Lower Peninsulas. The Shiras expedition differed from previous ones in the number of entomologists on the team. W. S. McAlpine, a lepidopterist, was a member of the Shiras Expedition, and his paper (McAlpine 1918) describes the activities of the residents of the area as well as the types of habitats where he collected Lepidoptera. Another expedition member, A. W. Andrews published a paper about the Diptera (Andrews 1918), in which he described: "The Whitefish Point region may be called a fly country preeminent. The Diptera seem to preponderate in sheer numbers over all other insects, and in all too many cases are omnipresent. So obnoxious and persistent are some of the pests that the cattle are forced to feed largely at night, and are kept shut up in dark sheds during the day when the flies are active."

These early biological surveys in Michigan, supported by wealthy patrons, provide some of the earliest data that is verifiable, because by the time the surveys were underway, public institutions were available for the deposition of specimens, rather than the specimens remaining in private collections. The UMMZ acquired many vouchers from these early expeditions, and those collections were important results from a fledgling State Biological and Geological Survey. Alexander G. Ruthven later became the director of the UMMZ and eventually, President of the University of Michigan (UM). It is a long way from a mosquito-infested campsite on Isle Royale to the President's Office at the University of Michigan, but there were likely days when Ruthven would gladly have traded the UM President's office for a backwoods tent. The biography of Ruthven has many details on his ascent from a student to President of UM (Van de Water 1977).

It was not until the University of Michigan Biological Station (UMBS) opened in 1908 at Douglas Lake in Cheboygan County when new works appeared on Michigan Odonata. Abigail O'Brien published a short list of Odonata from the Biological Station in 1910, and a few years later, Arthur T. Evans published a more comprehensive paper on the Biological Station Odonata,

listing 43 species, including the only known northern Michigan locality for *Hetaerina americana* (Fabr.) on the Maple River (Evans 1915). The photographs that accompany Evans' paper leave no doubt that *H. americana* was collected there. The UMBS property would become a familiar place to a series of students interested in Odonata, such as C. Francis Byers (Byers 1925), J. W. Leonard, and E. J. Kormondy.

Although E. B. Williamson was one of the "giants" of American Odonatology, he collected very little in Michigan, even though he was located in neighboring Indiana. His first Michigan collections were apparently made while vacationing in Oden (Emmet County), a popular vacation spot for many people living in central Indiana. Vacationing Indiana residents could take an overnight coach to Traverse City, where they changed trains to Oden, north of Petoskey (Browne 1967). Williamson collected in Oden during the late summers of 1906 and 1907. The 1906 collecting was done while returning to Indiana from a collecting trip to the Algoma region of Ontario, Canada (Williamson 1907) which explains why had only a few specimens from that part of the state. Williamson (1907) states "On my return trip home [from Sault Ste. Marie] I stopped at Oden, Crooked Lake, Michigan, with my uncle, G. T. Williamson, and August 11<sup>th</sup> and 12<sup>th</sup> were spent collecting there. Later my cousin, Jesse H. Williamson, caught a few specimens about Oden. These records are mentioned in the lists that follow." None of his records were really notable, and Williamson merely listed the *Aeshna* species as "W, X, Y, and Z" in the 1907 publication. Walker subsequently identified them and used them in his *Aeshna* revision (Walker 1912). In 1914, Williamson traveled to Buchanan in Berrien County, and in 1919 to St. Joseph County. He had a short collecting trip to Branch County in 1925. However, in 1927, he visited several interesting sites in Jackson, Mackinac, and Luce Counties. The trips in 1927 were made with other staff and curators from the UMMZ. In all, his forays in Michigan resulted in only 250 specimens. Unfortunately, Williamson died at the age of 55 from a stroke. His close association with the UMMZ and interactions his peers has been summarized by O'Brien (2000). One can only speculate how much more he would have accomplished had he lived to his 70s, and it is likely that Michigan would have played a larger role in his research.

At the request of T. L. Hankinson and C. C. Adams of the Michigan Geological and Biological Survey, aquatic entomologist James G. Needham visited Walnut Lake in Oakland County for a total of 10 days in 1908. Walnut Lake was probably viewed as a good lake for commercial fisheries. Although Needham's research was primarily aimed at Chironomidae, he listed 34 species of Odonata. He apparently provided lists of what he collected there to R. A. Muttkowski in Wisconsin. Muttkowski listed J. G. Needham of Cornell and R. H. Pettit of the Agricultural College of Michigan (now Michigan State University, MSU) as providing lists of species from Michigan in his *Catalogue of Odonata of North America* (Muttkowski 1910). No localities or collectors were specifically mentioned.

A. F. Combs collected Odonata as a member of the 1915 Bryant Walker expedition to Schoolcraft County (Combs 1917). Most of his observations and collections were made near the Manistique River, and he listed 49 species. Many of those specimens (and those of others from the expedition) bear the locality "Michigan: Schoolcraft Co., Floodwood." Floodwood is not on current maps, but thankfully, J. S. Rogers wrote: "All the field work was done about a locality known Floodwood, situated on the Manistique River some twenty-six miles northeast of the city of Manistique. The surrounding country was largely the typical cut and burned-over pine land of Michigan, undulating sandy plains bearing a scattered growth of jack pine, birch and aspen..." (Rogers 1918).

An interesting note from Combs' paper was the addition of an unfamiliar named species. Combs wrote "*Somatochlora walkeri* Kennedy. – This species,

described by Kennedy from the material collected..." He gave a name that was not yet published (nor would it be). What happened is detailed somewhat in Walker's 1918 paper that described two new *Somatochlora* species. Combs' specimens were described by Walker as *Somatochlora kennedyi*, and Walker wrote: "I take pleasure in naming this species after Mr. Clarence Hamilton Kennedy in recognition of his valuable contributions to North American odonatology. Mr. Kennedy recognized this species as distinct independently of the writer and at about the same time, so it is particularly fitting that it should bear his name." In the introduction to his paper, Walker indicated that he had originally wanted to include the two species in a forthcoming monograph, but "at the request of another writer" he decided to publish them in advance. The "writer" was almost certainly Kennedy. Unfortunately, Kennedy's correspondence with Walker and with Combs prior to 1919 are missing, but otherwise would have been interesting to read. Combs also collected several times at Whitefish Point in Chippewa County in 1914, 1916, and 1930. He also made collections in Oakland County in 1916 and 1917. In all, there are 448 records attributed to him.

**1921-1950.** The first attempt at a catalog of Michigan's Odonata species was that of C. Francis Byers in 1927. Byers' list contained 42 genera and 130 species, and to his credit he personally examined 4300 adult and larval specimens (Byers 1927). The bulk of his specimen data came from the UMMZ collection, with most of the larvae coming from collections made by the UMMZ Fish Division's stream and lake surveys. Surprisingly, Byers had only collected in the area around Douglas Lake and UMBS, with about 130 specimens deposited in the UMMZ. However, Kormondy (1958) stated that "...examination of Byers' notes showed that, in most instances, these [identifications] rested upon larvae which are in Byers' personal collection." So, it seems that not all of the specimens he collected stayed in Ann Arbor, but may have left with him when Byers went to the University of Florida.

During the 1920s, many larval collections were made in Michigan by UMMZ and Michigan Department of Natural Resources (MDNR) ichthyologists. Fish seining often resulted in the collection of the larger instars of larval Odonata, and those specimens eventually ended up in the UMMZ Insect Division collections. John N. Lowe collected extensively across the Upper Peninsula, and his collections of Odonata larvae were somewhat puzzling at first, as they only had numbers that accompanied them in vials. Fortunately, W. R. Taylor catalogued the collections made by Lowe and cross-referenced his field notes, which was needed to provide proper locality data for the specimens (Taylor 1954). Another collector, Jan Metzelaar, was a highly-regarded fisheries biologist with the UMMZ and the MDNR. His unfortunate demise came from falling from his boat on Grand Lake near Alpena in 1929. He drowned after his chest waders filled with water when he became tangled up in a seine (Hubbs 1929). T. H. Langlois, another familiar name on specimen labels, often collected with Metzelaar, as well as with Carl Hubbs and T. L. Hankinson.

Leonora (Dolly) K. Gloyd (1902-1993) was an assistant to E. B. Williamson, and her association with the UMMZ lasted nearly 70 years. Her husband, Howard Gloyd, was a herpetologist at the University of Michigan, and left in 1936 to become director of the Chicago Academy of Sciences. Dolly Gloyd worked for the Illinois Natural History Survey, all the while raising her children and maintaining a connection to the UMMZ to pursue her work with Odonata. Starting in the 1970s, she spent the majority of her time at the UMMZ. In her earlier years in Ann Arbor, Dolly Gloyd traveled in several expeditions to the U. S. Southwest, as well as some in Michigan, and collected around the Ann Arbor area. In 1932-1936, she collected frequently at Third Sister Lake in Saginaw Forest off Liberty Road in Ann Arbor. Those extensive collections provide good baseline data prior to the suburbanization of the surrounding area and eutrophication of Third Sister Lake. Dolly Gloyd eventually described the damselfly *Enallagma vernale* after examining some unusual *Enallagma* from

Third Sister Lake collected by R. F. Hussey in 1919. The repeated collecting at Third Sister Lake during the 1930s provided only a few additional specimens. It wasn't until she had a large series from Seney National Wildlife Refuge in Schoolcraft County (the type locality) collected by Pierce Brodkorb in 1938, and some additional material from Douglas Lake (UMBS) collected by I. J. Cantrall and F. E. Lyman in 1939 that she finally published her description (Gloyd 1943). There is still debate on whether or not *E. vernale* is a valid species or a subspecies of *Enallagma cyathigerum* (Charpentier) (Donnelly 1989, McPeck 1998, Tennessen 2005).

The noted odonatologist Philip P. Calvert accompanied Dolly Gloyd to collect at Mill Creek in Dexter in July 1935. Ada Olson, a staff member at the UMMZ, accompanied Gloyd on several field trips to the northern Lower Peninsula in 1935. There are photographs in the UMMZ archives from a trip they took to Silver Lake in Oceana County. Insect nets, hanging wet clothes, a tent, and a Model A are not so different from what we see on field trips today. Aside from her collecting, Dolly Gloyd provided an immense amount of help to other students in the group. From the 1930s until the late 1980s, she identified many specimens sent to her by others, and many researchers have acknowledged her assistance in their publications (Garrison 1994). She contributed about 1700 Michigan specimens to the UMMZ collection. Dolly Gloyd had amassed a large collection of *Amphiagrion* specimens, convinced that she had found a new species which she called "*mesonum*" that was different from the Eastern Red Damsel, *A. saucium* (Burm.) and the Western Red Damsel, *A. abbreviatum* (Selys). Given Michigan's location, these may be intergrades between the two species, however, definitive determination has yet to be done. The UMMZ has a large collection of *Amphiagrion* which would allow for such an analysis.

Justin W. ("Doc") Leonard (1909-1975), an aquatic entomologist, wrote primarily on mayflies in Michigan. He was an aquatic/fisheries biologist for the MDNR for the majority of his career. A tireless collector and photographer of mayflies, he sampled throughout Michigan's trout streams. His specimens of Odonata and other aquatic insects reside at the UMMZ. His doctoral thesis work on *Acanthagrion*, a genus of Neotropical damselflies, was published posthumously, some 40 years after he was a student at UM (Leonard 1977). He wrote two papers on Michigan Odonata -- a description of the larva of *Celithemis fasciata* Kirby (Leonard 1934) and his note on *Stylogomphus albistylus* (Hagen) as a new record for Michigan (Leonard 1940).

**1951- 1996.** In the 1950s, a resurgence in the natural sciences took place in post-war Michigan. Robert Dreisbach (1888-1964), a chemist at Dow Chemical in Midland, was one of the serious avocational entomologists who traversed the state collecting almost any kind of insect. He envisioned a state-wide survey of insects, and he was an avid collector from the early 1930s until the early 1960s. He collected a number of Odonata, most identified by Gloyd. Those specimens reside at the UMMZ and MSU collections. A group of entomologists had been meeting in Detroit and Ann Arbor, and the eventual result was the formation of the Michigan Entomological Society (MES) in 1954. This included a newsletter and a journal that 50 years later, still serve the Great Lakes region. The *Newsletter of the MES* and the *Michigan Entomologist* (later renamed *The Great Lakes Entomologist*) provided an outlet for many students and collectors to publish their new state records, and I cataloged those publications in two earlier papers (O'Brien 1983, 1988).

The previous 50 years of expeditions, collecting trips, summer projects, and accumulation of specimens in museums came to fruition with Edward J. Kormondy's 1958 *Catalog of the Odonata of Michigan*. Kormondy, a doctoral student at the UMMZ, worked on *Tetragoneuria (Epitheca)* for his dissertation (Kormondy 1959), and he no doubt saw the opportunity to update the Michigan catalog while at the UMMZ. Kormondy went on several trips across the state

while collecting for his thesis work, and picked up a number of other Odonata along the way. Kormondy's compilation of records provided an authoritative list of species and distribution data that was essential for anyone interested in odonates in Michigan. Like any catalog, it was based on the data available, and provided an impetus for additional collecting. The only weakness with Kormondy's work is the inclusion of unverified literature records as the basis for distributional data. One should examine the specimens to verify identifications that are given in the literature (O'Brien 1998). Nonetheless, Kormondy's 1958 Catalog is now 50 years old, and the MOS benefited from having it as a starting point. Kormondy's deposition of 1672 Michigan specimens places him as one of the most prolific collectors during this time period. Whenever a species inventory is published, it seems that new records are discovered soon after. So it was with Kormondy's catalog, and he published a short paper just a few years later (Kormondy 1962) in *Entomological News* with 245 new county records! In summary, Kormondy remains one of the most prolific and thorough researchers of Michigan Odonata.

Kormondy's catalog remained as the authoritative reference for the next 50 years. Subsequent work on Michigan Odonata by others in the following years was sporadic, resulting in relatively few publications on the fauna, except for the occasional new record. However, a number of people collected specimens throughout the 1960s to the 1980s, resulting in hundreds of records that were later recorded by the MOS. A significant number of specimens were accumulated by students and staff at MSU from the late 1950s into the 1970s, accounting for about 1900 specimens, from all over the state.

One MSU student, Peter J. Martinat, collected Odonata extensively in Michigan during 1968-1969, and those specimens were identified by Gloyd, who kept a record of them in the UMMZ. The specimens were in Martinat's personal collection until he left them in the collection at the State University of New York College of Environmental Science and Forestry (SUNY-ESF) at Syracuse, in the late 1970s. Upon hearing of the extensive holdings of Odonata at the UMMZ, Frank Kurczewski of SUNY-ESF transferred the Michigan specimens collected by Martinat to the UMMZ collection in the early 1990s.

During the second half of the 20<sup>th</sup> century, several biologists in Michigan used Odonata as subjects for testing behavioral and evolutionary hypotheses. Jon Waage, a student at UM, studied *Calopteryx* species in southeast Michigan (especially at Fleming Creek at Matthaei Botanical Gardens). His early papers on adult longevity (Waage 1972) and territoriality (Waage 1973) of *Calopteryx* are classic papers that should be read by anyone working on insect and especially, Odonata behavior. Later, in the early 1980s, Joel Weichsel (also at UM) worked on *Hetaerina* in southeast Michigan, and found the first record of *Hetaerina titia* on a small tributary to the Huron River (Weichsel 1987, 1998). Ola Fincke has studied *Enallagma* behavior at UMBS since 1980 (Fincke 1982).

Odonata are widespread, often very showy, and a real challenge to collect with nets, so most of the specimens collected in the latter half of the 20<sup>th</sup> century were adults collected on the wing. Norman Sloan collected 11 species of dragonflies from mist nets in Baraga County in 1966 while studying the birds that were trapped by the nets (Sloan 1967), and Dolly Gloyd identified the new county records for Sloan. R. H. Winkler published a short paper on dragonflies from Macomb County (Winkler 1966). Robert Glotzhofer detailed a short trip to Isle Royale and found an atypical *Sympetrum semicinctorum* (Say) that was reported as *S. occidentale* Bartenev (Glotzhofer 1985). However, after careful analysis, *S. occidentale* was recently designated a junior synonym of *S. semicinctorum* (Pilgrim and von Dohlen 2007). There were no broader concerted efforts at Odonata collecting in Michigan until the 1990s. Van Buskirk listed 50 species of Odonata from Isle Royale (Van Buskirk 1992), still the most remote of Michigan places; and Kielb's papers on Libellulidae in southeast Michigan

and adjacent Essex County, Ontario (Kielb 1996a), and the distribution of Great lakes dragonflies (Kielb 1996b) were the first attempts at compiling distribution records in many years.

As Odonata became popular elsewhere as subjects for biodiversity studies, and more attention was focused on riparian habitat conservation, dragonflies were an obvious choice for natural heritage programs. Hence, the Michigan Natural Features Inventory (MNFI) started sampling for species considered to be at risk. From 1995-1997, David Cuthrell and others at MNFI sampled various sites in both Michigan peninsulas – collecting adults and also larvae and exuviae. The extensive larval/exuviae collections were identified by William A. Smith in Wisconsin, and were later incorporated into the MOS data and UMMZ collection.

I started working on the insect fauna of the Huron Mountain region in Marquette County in 1985. As a guest researcher of the Huron Mountain Wildlife Foundation, I had access to one of the most interesting and least developed areas of the Upper Peninsula. My early research was focused on Hymenoptera, and after a short hiatus from working in the Huron Mountains, I agreed in late 1995 to start surveying that region for Odonata. In 1996, I started a 6-year project to assess Odonata fauna of the Huron Mountains with the aid of Ethan Bright and Michael Kielb (O'Brien, et al. 2003).

That summer (1996), the three of us realized that the time was ripe for a state-wide survey and we formulated the Michigan Odonata Survey. The preliminary MOS handbook was the starting point for the survey (O'Brien 1997). We thought that the survey could be completed in approximately 7 years. The time frame was off, but as of January 2008, the MOS effort has been a success, and has been used as a template by other states to improve their Odonata survey efforts. The MOS history will be written as a section in the forthcoming *Catalog of Michigan Odonata*.

Throughout the many decades of collecting and research of Michigan species, collectors and research methodology as well as interests have come and gone. However, the one thing that has kept all of their efforts useful, and still relevant, has been the collections of the UMMZ. Appointed as the "University Museum" early on, the resulting UMMZ has maintained collections for posterity. Hopefully, that treasure trove of biological information will remain for future researchers to use and add to.

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