

The Center for Systematics Collections at Virginia Polytechnic Institute and State University, (1973-1991)

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ABSTRACT

The Virginia Academy of Science promoted the idea of a state museum of natural history with the appointment of an ad hoc committee to study the matter in 1968. However, twenty years elapsed before the Virginia General Assembly passed legislation approving a state museum. On March 4, 1988, the Virginia Museum of Natural History in Martinsville was designated as the state museum of natural history, with branches to be set up in Blacksburg and Charlottesville. This article accounts the joint efforts of the many Virginia scientists who actively participated in establishing the museum.

The efforts toward establishing a Center for Systematics Collections at the Virginia Polytechnic Institute and State University (Virginia Tech) came about through realization by professors teaching courses in systematics at Virginia Tech that there was a void in knowledge of the biota of Virginia. For example, only one book on mammals of Virginia was in print (Handley and Patton, 1947). Also, before the 1960's, only one manual was available on invertebrates; this for the 154 species and subspecies of butterflies of Virginia (Clark and Clark, 1951). To remedy the situation, two series of research bulletins were initiated at Virginia Tech: one on scale insects in 1967 (Yang and Kosztarab, 1967) and another, "The Insects of Virginia," in 1969 (Kosztarab, 1969). The latter series was begun in collaboration with R. L. Hoffman (Hoffman, 1969). Perry C. Holt further expanded these efforts by organizing a series of three symposia dealing with the distribution of invertebrates, vertebrates, and plants in the Southern Appalachians (Holt et al., 1969, 1971; Holt and Paterson, 1970).

In 1968, Holt and Kosztarab were appointed by Paul B. Siegel, president of the Virginia Academy of Science, to serve on an ad hoc Committee on the Museum of Science (CMS) for Virginia, and to provide recommendations on the feasibility of a museum to the State Museum of Science Study Commission of the Virginia General Assembly. This Commission held public hearings in Virginia on the museum issue. Kosztarab chaired a subcommittee for planning and organizing a symposium on the State Museum of Science during the May 1969 meetings of the Virginia Academy of Science. As a result of these efforts, the Science Museum of Virginia was established in Richmond during 1977. Unfortunately, the State Museum of Natural History proposed by the committee members to be established near or at Virginia Tech was not acted on until 1989. Kosztarab was asked by the committee (CMS) chair, E. S. Harlow, to develop plans for an insect zoo for the museum that could be part of the future Natural History Museum in Virginia. He did so, and the plans are still available for implementation.

Attention was drawn to the neglected natural history collections at Virginia Tech, by a series of articles in local papers such as *The Montgomery News Messenger*

(July 8 and July 24, 1969), and in the July and August 1969 issues of *Techgram*. These valuable collections were scattered in different locations, were often inaccessible to students and researchers, and were badly in need of work though they were without any curatorial staff. The eight collections in 1969 included fish, birds, mammals, branchiobdellid worms, insects, flowering plants, animal fossils, and minerals and rocks. Today we can add to these a sizable plant fossil collection, a gem collection, and a fungus collection. The last was expanded from several packets in 1970 to the current 26,000 specimens.

Activities in systematic biology at Virginia Tech were rejuvenated with the participation of P.C. Holt and M. Kosztarab in the symposium and workshop, "Systematic Biology - The Development of a National Program on Resources and Resource Management," held at the National Academy of Sciences in Washington, D. C., July 6-8, 1972. The Association of Systematics Collections (ASC) was initiated at this meeting, with Virginia Tech among its first member organizations. Simultaneously, it appeared practical to formalize our own systematics collection-related activities. Therefore, with an initial allocation of \$1,000 from the Research Division of Virginia Tech, the Center for Systematics Collections (CSC) was established at Virginia Tech in August 1973. Perry C. Holt, Professor of Zoology, was selected to serve as the first director of the CSC, and Curtis S. Adkisson as Assistant Director, to be assisted by an Advisory Committee from the faculty, with the stipulation that the directorship would be rotated among the curators of the major collections. Professor Holt initiated an active program to improve the maintenance and support for the collections. One of his first activities included a proposal for the preparation of a paperback book, "Manual for the Collections of Natural History Specimens." He requested assistance from 27 faculty and graduate students to prepare the needed manuscripts. This good idea has not been completed to date. In February 1974 a three member Visiting Scientist Committee from the Association of Systematics Collections evaluated the status of the Virginia Tech Natural History Collections (Dickinson et al., 1974). They noted that while there were very productive and important research programs in systematics at Virginia Tech, a very serious space problem existed for the collections.

In May the next year (1975) the Virginia Tech curators organized and hosted the annual meeting of the ASC. Curtis S. Adkisson, then associate director of the center, served as chairman of the local arrangements committee. A number of colleagues from the ASC visited various collections during their time on campus.

Perry Holt resigned his duties as Director in March 1976. He had suffered some disappointing setbacks because of lack of sufficient funding from Virginia Tech for the CSC and because of disagreements with the proposed policy of placing under the director's control the operations of the different collections at Virginia Tech. Richard K. Bambach was appointed on April 29 to succeed him, with Duncan M. Porter serving as Associate Director. Their initial two-year term in 1978 was extended to an indefinite time.

Bambach held several curator's meetings in 1976-77 and 1977-78, but no institutional progress could be made. There was no potential for cooperation among the departments in which the collections were lodged because of distrust remaining from the ill-fated proposal in 1976 on operation of the CSC. Bambach did keep Virginia Tech visible on the national systematics scene by participating in the ASC

national meetings at Chicago, Illinois (1977), San Diego, California (1978), Cambridge, Massachusetts (1979), and Toronto, Canada (1980) and by serving on the ASC Membership Committee from 1977 to 1980. Collection care at Virginia Tech continued to be difficult, and the fish, amphibian, and reptile collections in the Department of Biology were transferred to the American Museum of Natural History during Bambach's tenure as Director of the CSC, because the Department of Biology elected to discontinue curatorial care and maintenance of the wet collections, and because no other resources could be obtained within the University at that time. The fish collection, built by Robert D. Ross, was one of the largest in the eastern United States. When the Research Division (under David Roselle) stopped paying the University's membership dues to the ASC (and even billed Bambach — a tenured professor — personally for his office telephone!), Bambach realized that further effort on behalf of the CSC was futile in the climate of the time.

In 1981 the Department of Entomology, at the request of Department Head Sidney L. Poe, with the assistance of the entire faculty and led by a five-member committee, evaluated the insect collections of the department. The 32-page report (Voshell et al., 1981) strongly urged the administration to hire a full-time curator and to continue supporting the maintenance of the valuable collections. Because increased support did not materialize from the University, a two-year NSF grant was requested in 1983 and was received. It provided \$48,000 for urgently needed improvements in the insect collections, such as new cabinets and drawers, and with the help of Stephen Bullington, the entire collection was upgraded during 1984-85.

The Center received minimal funding from the Research Division, and even the \$1,000 yearly allocation was discontinued when Virginia Tech faced budget cuts during fiscal year 1979-80. After falling behind in paying membership dues to the Association of Systematics Collections, Director Bambach, in a letter of March 20, 1984 sent to A. W. Steiss, Director of the Research Division, expressed concern about the lack of support for the Center from the Administration. He suggested the reactivation of the Center with appointment of a new director and an initial yearly allotment of approximately \$2,000. He further proposed that M. Kosztarab assist with the reactivation. Bambach also suggested the formation of a representative Committee from active faculty in the interested three departments, to include Porter from Biology, Kosztarab from Entomology, and himself from Geology. Kosztarab was asked to represent Virginia Tech at the 1984 ASC annual meetings in Urbana, Illinois.

In December 1984, a meeting was called by Gary Hooper, Vice Provost for Research and Graduate Studies, that included Hooper, Steiss, Bambach, Porter, and Kosztarab. It was suggested that back membership dues to ASC (\$900 for 1983-84) probably would be forgiven if we would make a new commitment in 1985. It was agreed that the systematics collections community should build credibility with positive action and that both the University and Blacksburg could benefit from an active Center. Kosztarab reported that from his impressions received at the last two ASC meetings and from federal offices in Washington, there was a renewed interest in supporting activities related to the environment, and the Center could well fill some of the existing void at Virginia Tech. Gary Hooper

requested that the curators put together for him a short assessment of each collection, including grant money or other outside or departmental support received and research either completed or under way that was associated with the collections, during the past five years. He also needed information on what uses were being made of the collections, the amount of labor utilized to maintain them, and the available space for each collection. During the meeting an assessment was made of which departments had natural history collections and who was in charge of such material. Bambach was entrusted to collect, summarize, and submit the reports to Hooper. It was apparent that the Virginia Tech Administration, through Hooper, honestly wanted to remedy the situation. Hooper's comments gave the impression that the data requested could help to make a case for including our need for a museum building in the major fund raising campaign of the University with a target of \$50 million. Somehow our report never reached the appropriate officials, and although the university fund raising was very successful (reaching 112 million dollars), dreams of a natural history museum building were not realized at this time.

The Research Division paid the 1985 ASC dues (\$500) late in 1984. Kosztarab was invited to the 1985 ASC annual meeting in Los Angeles, to serve as moderator and to make a presentation on the progress of the National Biological Survey project (Kosztarab, 1986). Kosztarab was also asked in 1985 by Noel T. Boaz, Director of the privately supported new Virginia Museum of Natural History (VMNH), to serve on its Scientific Advisory Board, and did so until Boaz dissolved the Board in 1988. Kosztarab's membership on the board provided a direct link to the VMNH from the Virginia Tech faculty and the natural history collections. Boaz and Kosztarab agreed that they would work together toward a state-supported VMNH located in Blacksburg and Martinsville.

During 1986, the Museum Study Committee (MSC), chaired by Kosztarab, was formed. The MSC had a number of meetings with administrators and attempted successfully to resurrect interest in the neglected natural history collections at Virginia Tech. After an inventory of the collections had been prepared, an assessment was made of the urgent needs of the nine collections, such as storage space, fireproof housing, maintenance, etc. On December 5, 1986, in a six-page letter, recommendations were made to Vice Provost Gary Hooper to regard the Collections as analogous to a library, to support them as an institutional resource, and to provide a museum building for the appropriate housing of the material. It was also suggested that if no immediate help was possible from Virginia Tech, we should join efforts with Noel Boaz through some institutional affiliation to obtain needed funds from the Virginia Department of Conservation and Historic Resources, a new funding source for Virginia Tech.

On Kosztarab's request, Orson K. Miller, Curator of Fungi, represented Virginia Tech at the 1987 ASC Annual Meeting in Gainesville, Florida, while Kosztarab served as a Technical Advisor for a State Legislative Subcommittee during 1987, studying a course of action on VMNH. A number of important meetings were held during 1987 between Boaz, the Virginia Tech Museum Study Committee, and Gary Hooper.

Several articles were printed in the *Roanoke Times & World News*, *Collegiate Times* and *Spectrum* dealing with the plight of the natural history collections at

Virginia Tech and the desirability of having a museum building. In June 1987, Kosztarab was appointed by Acting Provost John M. Perry to serve as Director of the CSC and, on Kosztarab's recommendation, Stephen E. Scheckler was asked to serve as Associate Director.

Virginia Tech President William E. Lavery, in a letter of August 10, 1987 to Noel Boaz, director of VMNH, expressed the university's endorsement for the concept of a state-supported Virginia Museum of Natural History that would affiliate with the "Virginia Tech Natural History Museum, a branch of the overall museum." Boaz used this letter as part of his legislative packet for the General Assembly's Subcommittee studying the feasibility of designating VMNH as the State Museum of Natural History under the Secretary of Natural Resources.

During November 1987, copies of resolutions in support of a Natural History Museum at Virginia Tech were passed by the Blacksburg Town Council, the Board of Supervisors of Montgomery County, The Greater Blacksburg Chamber of Commerce, and the Blacksburg Host Lions Club. Supporting letters for this effort were received from December 1987 through February 1988 from Virginia Tech Dean and Interim President Paul E. Torgerson, Congressman Rick Boucher, and Virginia Secretary of Natural Resources, John W. Daniel, II.

The 100th Anniversary of the initiation of the Natural History Collections of Virginia Tech was celebrated on December 10, 1987 with a 20 meter-long exhibit in the Newman Library and with a reception in the Alumni Hall, where President William Lavery was presented with a giant trilobite fossil for his support to the natural history collections at Virginia Tech. At the same reception, a museum building model and blueprints were displayed. These had been prepared at no cost by graduate students working with Professor Hans Rott of the College of Architecture.

During 1988 a number of newspaper articles appeared about the history and inventory of the Virginia Tech Natural History collections. During January and March, alone, six newspaper articles in Blacksburg, Roanoke, Martinsville, and Richmond dealt with our museum effort. A logo was designed (Figure 1) and adopted for the Center, and many CSC meetings were held. Also Scheckler and Kosztarab, with input from the entire Museum Committee, prepared a number of documents on topics such as the proposed relationship and agreement between Virginia Tech natural history collections and VMNH (Jan. 30), curatorial appointments (May 3), proposed timetable for progress (1988-91) with the Virginia Tech Museum/VMNH effort, budget plans and requests for 1988-89 FY. These were forwarded to Vice Provost Gary Hooper. Also, the Center and Hooper negotiated an organizational format with Director Boaz, who was granted Adjunct Associate Professor status by the Biology Department. Scheckler represented the CSC at the Annual Meeting of the ASC in Chicago on May 11-13, 1988.

Joint efforts with VMNH bore fruit on March 4 when the Virginia General Assembly designated VMNH as the official state museum of natural history with an initial \$5 million grant for the museum included in Governor Baliles' 1988-89 budget.

The CSC at Tech received \$15,000 for operations for 1988-89; 57% of this was distributed to the nine collections for maintenance and cataloging. In addition, Hoffman and Kosztarab obtained a \$21,000 grant from the Non-Game Program

of the Virginia Game and Inland Fisheries, to inventory the invertebrate fauna of Virginia. VMNH allotted \$100,000 for the maintenance of the Virginia Tech natural history collections for the 1988-89 fiscal year after a final agreement was signed on our affiliation as a Branch with VMNH. Scheckler led the effort to prepare a document on institutional commitment of Virginia Tech to VMNH that was revised several times until all parties agreed on the final text. Meanwhile, over a year of work and negotiations were needed before the agreement was signed in 1989.

Virginia Tech's Newman Library needed more space for storage of pre-1950 documents in the former Cheds Store building; it requested from the administration use of the adjoining space then occupied by the Bailey-Law vertebrate collection. Because the location and the building were not adequate for storing this valuable collection, our curators agreed to move it as soon as a better space could be found. With help from Vice Provost Gary Hooper, the former Studio I theater building at 428 N. Main Street was selected in January 1989 on a three-year lease, for temporary housing of the zoological collections and for displaying natural history exhibits for the public. An Adjunct Professor status was granted in May in the Biology Department to Michael W. Hager, Director of VMNH. It was agreed that similar adjunct status could be extended to all curators at VMNH and by VMNH to all Virginia Tech professors-curators as a reciprocal arrangement. Richard L. Hoffman already had such a title in the Entomology Department. Kosztarab asked Scheckler to continue his valuable work from then on, as co-director of the CSC.

A Mission Statement of the Virginia Tech museum branch was unanimously adopted by members of the Museum Study Committee on April 11, 1989. It stated:

"The purpose of the Virginia Polytechnic Institute and State University Museum of Natural History is to promote science through research, education, and extension, and to inventory, catalogue, interpret, and conserve our natural heritage. Our special mission is to support natural history research and education for the university community."

A workshop and symposium was organized at the Virginia Tech campus on the Virginia's Endangered Species, April 28-29, 1989. The curators from the Center actively participated, some with major talks and others with contributions that were collected and published in a book, *Virginia's Endangered Species* (Terwilliger, 1991). The proceedings of two other symposia that dealt with the status of the systematics of insects and arachnids of North America were printed at Virginia Tech (Kosztarab and Schaefer, 1990) as part of the CSC's national effort.

The Studio I theater was remodeled during spring and summer 1989 to fit the needs of the zoology collections and to provide two halls for public exhibits, with offices for the management, staff, and curators. As a basis for the first museum exhibit a set of wall charts on "Biodiversity Endangered" was ordered from the Smithsonian by Kosztarab, who also asked Susan Eriksson to head an Exhibit Committee consisting of all members of the CSC. The members agreed to provide her with needed materials and help. Jack A. Cranford single-handedly prepared the North American large mammals exhibit hall.

A proposal for a \$105,000 grant supporting the establishment of the new museum branch was submitted by the co-directors of CSC to VMNH in September 1989. Funding was received for one year. From this grant each of the nine

collections received \$5,140 for urgent upgrading, cataloging, and maintenance. This funding was in addition to some equipment transfers that included a number of new cabinets for bird and mammal storage, and two personal computers that were provided for the bird and fungus collections. Because of limited funds, used furniture was purchased from the Virginia Tech Central Stores Warehouse to fill the most urgent needs in furnishing the empty rooms in the new museum building. During the summer, the affiliation agreement was finalized, and it was signed in the fall by administrators at Virginia Tech and VMNH.

A search was initiated to find a director for the new branch museum at Virginia Tech, while Kosztarab and Scheckler were requested by Hooper in November 1989, to serve as co-directors of the Branch and the Center until a director was appointed.

The doors to the new museum were opened for the public on April 16, 1990 in connection with Earth Week. About 700 people visited the museum in seven hours during the first two days. The exhibit "Diversity Endangered" was well received by both the university and the public. Many school and civic groups visited before it was taken by VMNH as a traveling exhibit to reach many communities in Virginia.

Because of the low budget allocation for FY 1990-91 (\$190,000, with half used for rent), a number of reductions had to be made, seriously damaging ability to accomplish the original objectives. The museum had to rely on volunteers to keep the exhibits open for the public, also to give up cataloging and preparation of new exhibits. The curators agreed that essentials such as safe locks on doors, an alarm system, and fire extinguishers had to be provided; also a collection exhibit manager had to be employed, as soon as possible. An Executive Committee was formed for the new museum branch in February 1990, to act on matters of urgency and of general concern, until a Director was appointed.

Duncan Porter represented the Center at the Annual Meetings of the ASC in Richmond, Virginia, during August 1990. Scheckler continued his efforts to obtain official recognition and summer work appointments for the faculty curators. A "contract" and a draft letter were circulated for input by curators and heads of the departments concerned. The curators enthusiastically supported this effort, but the idea received only lukewarm attention from administrators, who felt that with the decreased budget, they might not be able to come up with needed funds for summer employment of their faculty-curators. Scheckler resigned on July 1 from his position as Associate and/or Co-director of the CSC. To avoid duplication of efforts between the new museum and the Center, Kosztarab requested Associate Provost Stout to redefine the role of the CSC and to change its name to "Center for Systematics Studies."

Susan C. Eriksson was appointed Executive Director of the new Museum and Michael Kosztarab was named its Founding Director in the summer of 1990. Hooper requested Kosztarab to continue in the position as Director of the Center until the future role of the Center was defined. An ad hoc Committee composed of James R. Karr, Orson K. Miller, and Kosztarab (chair), was formed to evaluate the future of the Center, recommended that the curators transfer the Center's function to the new museum after July 1, 1991, thus saving money and avoiding duplication of effort. It became apparent that the Center's major goals had been

met with the establishment of the Virginia Museum of Natural History at Virginia Tech.

It is apparent from the above discussion that the Center served as an important component in the establishment of a branch museum, by bringing together the systematics community into a partnership with a common goal. The Center also promoted the appropriate maintenance of the natural history collections, also collection based research. I can proudly state that the curators of those collections have an excellent record of accomplishments. During a ten-year period (1981-1990), they supervised the graduate research, some of it collection based, of 67 students, research that resulted in 35 M.S. and 20 Ph.D. degrees at Virginia Tech. They also published four books (four more were under contract in 1991), six monographs/bulletins, 34 book chapters, and 153 peer-reviewed journal articles. With an additional 102 popular press articles, their publication record totaled 299, not counting the 199 abstracts for professional meetings. They received peer recognition in the form of 370 invitations to committees, symposia, seminars, workshops, and other scholarly groups, and they generated \$2,128,700 through 79 external grants/contracts. This record speaks for itself on what a talented and hard-working group served on the committees of the CSC. The curators are listed in Table 1.

TABLE 1. Curators and the Collections Under Their Care at the Virginia Museum of Natural History at Virginia Polytechnic Institute and State University

Curators/Assistants	Collections	No. Specimens	Location
Orson K. Miller	Fungi	ca 26,000	Derring 3017A
Duncan M. Porter/ Thomas F. Wieboldt	Vascular plants	ca 90,000	Derring 3017A
Stephen E. Scheckler	Fossil plants	ca 10,000	Derring 3017B
J. Reese Voshell, Jr., Michael Kosztarab/ Mary H. Rhoades	Aquatic and terrestrial insects and larvae	ca 874,500	428 N. Main St.
Curtis S. Adkisson	Birds Bird egg sets	ca 19,500 ca 1,200	428 N. Main St.
Jack A. Cranford	Mammals	ca 6,500	428 N. Main St.
Richard K. Bambach/ S. Llyn Sharp	Fossil animals	ca 60,000	Derring 3061
Susan C. Eriksson	Rocks, minerals, and gems	ca 20,000	Derring 2062
GRAND TOTAL		1,108,000	Specimens

ACKNOWLEDGEMENTS

I would like to express here my heartfelt thanks to each member of the Museum Study Committee, composed of both faculty and staff associated with the natural history collections, who served so diligently and later continued to serve on the committee of the revitalized Center for Systematics Collections, which was later absorbed into the Virginia Tech Museum of Natural History Committee. Through the years, the curators and their associates spent many hours in meetings and discussions, on committees, and in gathering data for the CSC and for the administration. Often, without appropriate time allotment or credit, they curated the natural history collections under their supervision at Virginia Tech. James R. Karr and Hans C. Rott volunteered their expertise to our committees when we most needed it. I am especially indebted to Mary Rhoades for much assistance during the critical years that required much of her time in addition to her regular duties. Last but not least, we are all indebted to Stephen Scheckler for serving as associate director and later as co-director of the Center, and for preparing detailed minutes of each meeting, budgets, and position papers that served as a base for a large part of my summary here.

Gary Hooper, our "Godfather," now at Brigham Young University, will always be remembered for his enthusiastic help, moral support, and encouragement. And we also recognize Ernest R. Stout, Vice Provost for Research, who is currently overseeing our efforts for the museum.

I would like to recognize for their pioneering efforts, the first director of the center, Perry C. Holt, and Richard K. Bambach, who followed in that position, with Duncan M. Porter as associate director. Without their diligence and patience with both the curators and the administrators at Virginia Tech, we could not have achieved the high goals set for the Center. Members of the CSC and our other committees, not already named, include S. Llyn Sharp, J. Reese Voshell, Jr., and Thomas Wieboldt.

Linda Bland typed this text and helped to finalize it, after useful input from former members of the Center. Mary C. Holliman reviewed the final manuscript.

LITERATURE CITED

- Clark, A. H. and L. F. Clark. 1951. The Butterflies of Virginia. Smithsonian Miscellaneous Collections, vol.116, no. 7. U. S. Government Printing Office, Washington, D.C., 239 p.
- Dickinson, J. C., Jr., P. S. Humphrey and H. H. Ross. 1974. Report of the Present Status and Future Potential of the Center for Systematics Collections at Virginia Polytechnic Institute and State University. Association of Systematics Collections, Lawrence, Ks. Mimeographed, 16 p.
- Handley, C. O., Jr. and C. P. Patton. 1947. Wild Mammals of Virginia. Richmond, Va., Comm. Game and Inland Fisheries 220 p.
- Hoffman, R. L. 1969. The Biotic Regions of Virginia. The Insects of Virginia No. 1, Part II. Blacksburg, Va., Va. Polytech. Inst. Res. Div. Bull. 48:23-62.
- Holt, P. C. and R. A. Paterson, eds. 1970. The Distributional History of the Biota of the Southern Appalachians -Part II: Flora. Blacksburg, Va., Virginia Polytechnic Institute, Research Division Monograph 2: 414 p.

- Holt, P. C., R. L. Hoffman and C. W. Hart, Jr., eds. 1969. The Distributional History of the Biota of the Southern Appalachians -Part I: Invertebrates. Blacksburg, Va., Virginia Polytechnic Institute, Research Division Monograph 1:295 p.
- Holt, P. C., R. A. Paterson and J. P. Hubbard, eds. 1971. The Distributional History of the Biota of the Southern Appalachians - Part III: Vertebrates. Blacksburg, Va., Virginia Polytechnic Institute, Research Division Monograph 4: 306 p.
- Kosztarab, M. 1969. The Insects of Virginia: No. 1--Introduction to the Series of Bulletins on the Insects of Virginia, with a Literature Review. Blacksburg, Va., Va. Polytech. Inst. Res. Div. Bull. 48:1-21.
- Kosztarab, M. 1986. Some of the Activities Leading to This Symposium. In Foundations for a National Biological Survey. K. C. Kim and L. Knutson (eds.). Assoc. Syst. Colls., Lawrence, Ks., Symposium, Los Angeles, (1985) p. 23-27.
- Kosztarab, M. and C. W. Schaefer, eds. 1990. Systematics of the North American Insects and Arachnids: Status and Needs, Blacksburg, Va. Virginia Agricultural Experiment Station Information Series. 90-1: 247 p.
- Terwilliger, K. (Coordinator) 1991. Virginia's Endangered Species. Blacksburg, Va., McDonald & Woodward Publishing Company: 672 p.
- Voshell, J. R., W. A. Allen, M. Kosztarab, D. E. Mullins and R. L. Pienkowski. 1981. Committee report: Evaluation of Insect Collections in the Department of Entomology. Prepared for Department Head, Blacksburg, Va., Virginia Polytechnic Institute and State University. Mimeographed, 32 p.
- Yang, S. P. and M. Kosztarab. 1967. A Morphological and Taxonomical Study on the Immature Stages of *Antonina* and of the Related Genera (Homoptera: Coccoidea). Va. Polytech. Inst. Res. Div. Bull. 3:1-73.



FIGURE 1. Logo of the Center for Systematics Collections at Virginia Tech. It depicts the state tree (dogwood), the state bird (cardinal), the state insect (tiger swallowtail butterfly) and the Virginia white tail deer. Logo designed by Robert Turner, Jr. and Michael Kosztarab.