

The Magazine
of the
New York
State Museum

Legacy

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FALL 2005

INSIDE:



Two Sports
Exhibitions

New York's
Diverse Fishes

Albany and
the French
and Indian War

Fabulous Fossils



NEW YORK State
Museum



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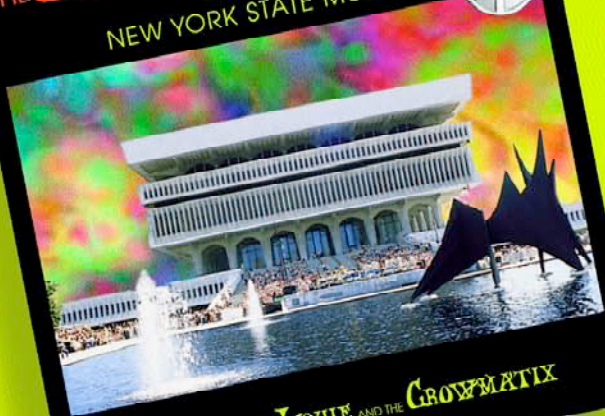
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NEW YORK State
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Trilobites from the Devonian age. Photos by Ron Barber, NYSM.

ERIC LONG/SMITHSONIAN INSTITUTION





JOHN VOSTI, NYSM

Legacy

The Magazine of the
New York State Museum

director's note

If you haven't visited the Museum over the past few months, I hope you'll visit soon. Your donations, as membership fees and voluntary donations at the gallery doors, have helped us continue the transformation of our public spaces. The Museum has been able to take advantage of a challenge in this year's state budget to multiply the impact of your contributions. Each dollar donated by our members and visitors is matched, dollar for dollar, allowing us to advance our plans for making the Museum a more engaging experience.

One of the first projects undertaken with the matching funds program was the re-carpeting of about 75,000 square feet of gallery spaces. Since the last carpet replacement, the Museum has entertained more than 6 million visitors—that much foot traffic is guaranteed to wear out carpets!

We will also be installing a new orientation system, to make finding your way around three acres of exhibition galleries more convenient. We have begun planning additional exhibits and orientation areas for the main lobby. Your visit will begin with an inviting, enriching overview of the Museum and its collections, research, galleries and programs.

Your donations are also making it possible to install several video projectors in the galleries and in the lobby. The projectors, along with additional video monitors and computer interactives, will help us share more of our collections and research and make the galleries more lively.

We've also been able to move forward with exhibition case design and fabrication. This has allowed us to highlight more of our collections and to share information, documents and objects from the collections of our sister institutions, the State Archives and State Library. We continually bring in new collections and want to devote space for sharing these acquisitions with visitors.

Thank you for your support—it's helping us transform your Museum!

Cliff Siegfried
Director, New York State Museum

www.nysm.nysed.gov

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Sports: More than Just a Game

Two exhibitions opening on October 15 capture how individual achievement in sports impacts society at large. *Sports: Breaking Records, Breaking Barriers*, an exhibition developed by the Smithsonian's National Museum of American History and the Smithsonian Institution Traveling Exhibition Service, explores the connection among famous athletes, sporting events, and American values. In *Miracles: New York's Greatest Sports Moments*, *Times Union* (Albany, N.Y.) columnist Mark McGuire identifies 25 memorable moments in New York sports history.

By showcasing 35 athletes and their performances, *Sports: Breaking Records, Breaking Barriers* explores women's changing roles, racial and ethnic integration, nationalism, perceptions about physical disabilities, the rise of sports celebrities and the effect of technology on performance and participation. All the artifacts in the exhibition are from the Smithsonian's National Museum of American History.

The events chosen for *Miracles: New York's Greatest Sports Moments* include moments from baseball, horse racing, boxing, football, basketball, and hockey, and share a common theme. "The improbable is probable, and the impossible never is," says McGuire. "There's always hope. The unexpected can happen at any moment, provided the moment is right." *Miracles: New York's Greatest Sports Moments* includes artifacts from the New York State Museum, other museums and private collections.



The goggles that New Yorker Gertrude Ederle designed for her 1926 swim across the English Channel will be shown in the upcoming *Sports: Breaking Records, Breaking Barriers* exhibition. Other native New Yorkers featured in the exhibition are Bonnie Blair, Michael Jordan and Sandy Koufax. Blair, a native of Cornwall, wore these speed skins (at left) when she won the gold in the 1,000 meters at the 1992 Albertville Olympics. Koufax, originally from Brooklyn, used this glove (at bottom) during a celebrated career with the Los Angeles Dodgers that included pitching a perfect game and four no-hitters.

IMAGES: ERIC LONG/SMITHSONIAN INSTITUTION

Fall Museum Series Focuses on the Adirondacks

The Museum's Research and Collections staff discusses various aspects of the Adirondacks in the upcoming Museum Series. The 10 programs, scheduled for Wednesday evenings throughout the fall, are free and open to the public.

"The Museum has a long history of research and collections work in the Adirondacks," says Dr. John P. Hart, director of research and collections. "This lecture series covers much of the research being done in the Adirondacks by current Museum scientists and historians."

Each of the programs focuses on a specific area of Adirondack

life. Topics include: the geologic history of the Adirondacks, the effects of stocking largemouth bass and other non-native fishes, the mining history of the region, the pen-and-ink sketches of Canajoharie drawing instructor Rufus Alexander Grider, the structures and furnishings of Adirondack Great Camps, facts and myths about acid lakes, the beauty of wild orchids, little-known facts about black flies, the composition and evolution of fluids in the Earth's crust, and 500 years of Adirondack wildlife. For complete event information, refer to *The Museum Calendar* or www.nysm/nysed.gov/calendar/.



Entrances to underground iron mines in Mineville, c. 1915



IMSGN

Lost Mines, Hidden Danger

BY DR. WILLIAM KELLY
AND ROSE SCHULZE

Mines large, small, shallow and deep have been opened across New York State and, over time, abandoned and forgotten.

Forgotten, yes, but they didn't go away. Mined-out cavities remain, often overgrown with barely any surface indication of the cavern below. Often, there is no information regarding the exact location of mine openings or underground voids. This becomes a problem when homes, industries, and communication and transportation systems expand into these sparsely developed areas. Worse, collapses have occurred under structures built over mined-out areas. To date, no injuries have occurred in New York due to mine collapse. However, the potential for personal injury or property damage is considerable since no law has ever required mining companies to provide maps to a governmental agency when mines were closed.

Dr. William Kelly heads the State Geological Survey at the New York State Museum. Among his research interests are economic geology and mining history. Rose Schulze, the manager of the underground mine program, also studies the oil and gas resources of New York.

The State Geological Survey, the geological research arm of the State Museum, and the New York State Department of Environmental Conservation's division of mineral resources are delving into geologic and engineering reports from the past 150 years to compile a database of information about the underground mines. Since starting the project in 2004, researchers have located 255 underground mines that were excavated for commodities ranging from arsenic to zinc. The majority of these are iron mines, reflecting New York's past prominence in this industry. Abandoned underground mines occur across the state, but are most prolific in the Adirondacks and Hudson Valley. Metal mines are the deepest and extend more than 2,000 feet underground. The mines with the largest areal extent are in central and western New York where salt and gypsum mines stretched for miles.

The database includes facts such as the mine name, location, owner, commodity and operational dates. Descriptions of the style of mining, ore body names and information on the geometry of the mine, where known, are also included. If available, old photographs of the mines and surface structures are linked to the mine records.

More than 1,300 maps associated with underground mines in New York have been located to date. The paper maps, which are often fragile, have been scanned into digital format for preservation and ease of distribution. The mine locations will be transferred to modern maps for easy use by the public.

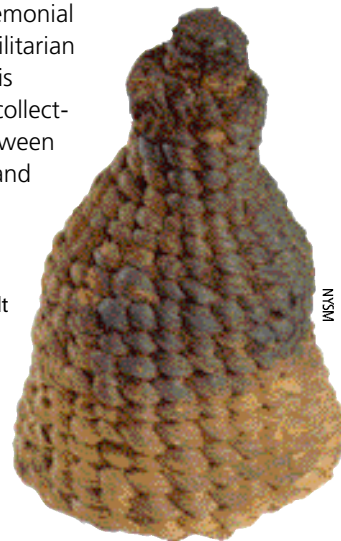
A Look Back The New York State Museum and the Capitol Fire

The disastrous "Capitol Fire" of March 29, 1911, is widely known for the destruction it wrought on the State Capitol building and the contents of the State Library housed there. Far less widely known is the impact it had on the State Museum.

Before what we now call the "old" Museum was installed in the State Education Building beginning in 1913, artifacts and natural history specimens from its collections were on exhibit and in storage at several locations in Albany. In 1910, a large proportion of the ethnographic and archaeological collections was put on display along the fourth floor corridor of the Capitol building.

For a few months an unparalleled group of objects was available to the public—thousands of archaeological artifacts and hundreds of ceremonial and utilitarian Iroquois items collected between 1848 and 1906,

Small salt bottle, charred from the Capitol fire (NYSM cat. no. 37105)



IMSGN

including most of the famed Lewis Henry Morgan Collection (www.nysm.nysed.gov/morgan/). Then came disaster. Heat, smoke and, finally, the collapse of the corridor ceiling destroyed or damaged 85 percent of the estimated 10,000 objects on display.

Luckily, exhibits of fossil sponges and mineral specimens installed along the Senate gallery corridor and botanical specimens stored in the basement were largely undamaged in the fire, but the collections described by the director as “the most complete assemblage of Iroquois materials in existence,” had sustained major irreplaceable losses.

Submitted by Dr. Penelope B. Drooker, curator of anthropology and assistant director, research and collections division

Biodiversity Lecture Series

A new lecture series highlights research and conservation efforts to preserve the biodiversity of New York State. The series includes lectures on the migration of Adirondack loons, the results of a six-year inventory of the biology of the state parks, the identification of important bird areas, and an overview of the New York Flora Project. The New York State Biodiversity Research Institute, housed within the Museum, funds research projects in these areas and sponsors this noontime lecture series on Wednesdays in October. For more information, visit www.nysm.nysed.gov/bri/.

Volunteers: The Heart of the Museum

Museum Volunteers
Joan and Frank
Pomellitto

From the vantage of the front lobby desk, volunteers Joan and Frank Pomellitto make it their mission to welcome each person who walks through the Museum’s doors.

And sometimes their greetings lead to conversations and memorable moments. Like the time they asked a group of preschoolers to sing a song and the children kept right on singing, song after song. Or like the many times that Frank has joked with young children who stop by the desk. If you’ve been good for two days, he tells them, the mastodont [exhibited in the lobby] will wag its tail when you touch the interactive kiosk.

The Pomellitots, married for 46 years, have been bringing their own sense of fun to the Museum for the past three years. By volunteering at the front desk each Tuesday morning from May through November, they meet people from all over the world and enjoy the few minutes they spend with them. The couple also brings positive energy to the membership office, while ushering at Museum concerts and when participating in the committee that plans programs and performances.



Frank and Joan Pomellitto have been Museum members since 1992 and volunteers since 2002.

“If you’re not having fun, you can’t relate to the people you are trying to help,” says Frank. “The secret to volunteering is to be enjoying it.”

A former surgical nurse, Joan also gives her time to Concerned Action for Parents, Teens And Interested Neighbors (CAPTAIN), a not-for-profit human services agency in Clifton Park. Frank, who is retired from business, enjoys restoring old cars and building furniture in addition to volunteering at the Museum.

“Joan and Frank serve as models for what the Museum looks for in our volunteers,” says Cliff Siegfried, director of the Museum. “Frank’s humorous and outgoing personality and Joan’s never-ending smile make the New York State Museum a fun, engaging experience for each visitor.”

On a recent Tuesday, the Pomellitots were training a volunteer new to the lobby desk. As part of the training, they talk about how to draw visitors into the Museum. As Joan says, “If they have a good experience the first time, they will be back.”

The New York State Museum offers many interesting and educational opportunities for volunteers, interns and those interested in community service placements. For more information on how to become involved, please call 518-402-5869.



Tupac Yupanqui, Peru, mid-18th century. Oil on canvas, 23-1/8 x 21-1/4 inches. Brooklyn Museum 1995.29.11

World Cultures on View

An exhibition from the Brooklyn Museum brings masterpieces from many cultures to the State Museum. *The World in Brooklyn: Selections from the Brooklyn Museum* opens November 19 as the next installment of the Bank of America Great Art Series.

Works included in the exhibition include a rare mid-18th century Peruvian painting of the legendary Inca ruler Tupac Yupanqui and the famous Emancipation Cane, a work of 19th century folk art that chronicles the most important moment in African American history. The Brooklyn Museum also shares works from its renowned

collection of Egyptian and Islamic art as well as its collection of arts of the Americas, Africa, and Asia.

The exhibition will also draw from the museum's collections in decorative arts, European and American painting, contemporary art, prints and drawings, and feminist art. "It represents the diversity of the Brooklyn community and the Brooklyn Museum," says Kevin Stayton, curator of decorative arts at the Brooklyn Museum, the second-largest museum in New York City.

The World in Brooklyn: Selections from the Brooklyn Museum runs through February 26, 2006, in West Gallery.

A New York Experience

A new Metropolitan Hall exploration station explores emigrating to the United States, tenement life, and sweatshop work at the turn of the 20th century. The items on the new station range from the games cats cradle and hopscotch to a washboard, flat iron, shoe, collar, suitcase, milk jug, and button hook from the Museum's collections.

Cathy Cozzens of Visitor Services developed the new exploration station expecting to share these objects from the early 1900s with young people. Instead, the objects have also attracted attention—and prompted stories and reminiscences—from their parents and grandparents. "It brings out different reactions in different people," says Cozzens, who includes her own family history by using her grandmother's button for the hopscotch game. Cozzens, originally from Scotland, also shares her story of becoming a U.S. citizen to contrast with the early 20th century experience.

The New York Metropolitan and other exploration stations promote discussion about the Museum's exhibits. Other stations focus on mastodons and mammoths; sea life and fossils; minerals; moose, beavers, bears, and other Adirondack mammals; and Native Peoples. In addition, a "welcome" station used in the main lobby introduces visitors to the Museum.



ALBERT GINDICA, NYSM

Cathy Cozzens discusses immigration, tenements and sweatshops at the tenement scene in New York Hall.



Continuously drawn kilns, like this lime-kiln battery located directly across the street from the Alvord Plaster Mill, functioned from 1860 to 1917 to burn limestone. The oxide of lime remains behind as a powdery or lumpy substance that is often white calcined lime. The burned limestone was taken to the mill's "cracker" room, where it was crushed in machines and reduced to fragments and grains in the production of cement and plaster.

A Mill's Savvy Business Skills

New York experienced a boom in the production of natural cement during the construction of the Erie Canal. The product was in high demand for hydraulic structures for both the canal and other navigable waterways. Extensive excavation and mapping surveys of the E.B. Alvord Co. plaster mill in Jamesville, just outside of Syracuse, have yielded a great deal of information on the operation of a representative plaster mill.

The site—which dates back to the early 1800s—is unique in that it offers clues as to how it was able to survive for more than a century. The mill was converted from producing flour to producing natural cement and plaster in the mid-19th century. The mill also remained competitive by using new technologies and nearby transportation routes. In an era when regions located away from the canal

were suffering economically, the E.B. Alvord Co. mill remained a viable business venture.

Through research, Robert Dean of the State Museum's Cultural Resource Survey Program (CRSP) hopes to shed light on changes in the mill's layout as new technologies and power systems were adopted, as well as the mechanics of those power systems. The most important change was a shift in production from the manufacturing of flour to natural cement. Information about the various stages of plaster production and where this took place at the mill can also be gleaned from the excavations. Assorted structural remains found above and below ground, including a sluice associated with a water control feature, a turbine pit, lime-kiln, remains of a dam, and interior and exterior walls will help aid in the discovery of the evolution of the site.

Secrets of Stone Flakes

The Crusoe Creek site, in Wayne County between Syracuse and Rochester, was a seasonal camp during the Late Archaic (4,000–1,500 B.C.) and Early Woodland (1,000–100 B.C.) periods. Archaeologists have worked at the site in previous decades, and staff of the Museum's Cultural Resource Survey Program (CRSP) were there in fall 2004.

The site has yielded large amounts of stone flakes that are the chips off a piece of stone being worked into a tool such as a projectile point ("arrow head"). By analyzing these flakes—which have certain diagnostic features—CRSP's Daniel E. Mazeau and other archaeologists were able to assemble information about stone tool production at the site.

The vast majority of the flakes show that during the Late Archaic Period, the occupants of the site were bringing in "blanks" that had already been worked and needed only limited processing to be turned into formal tools.

This trend continued into the Early Woodland Period when a more diverse group of tools was manufactured. During this period, there is also evidence that the site's occupants were bringing raw materials, including unworked cores, to the site to be worked into projectile points, scrapers and bifaces. Why this transition in tool manufacturing tasks at the site took place is still unknown.



Chipped stone tools and projectile points from the Crusoe Creek site

Stephen Shoemaker is a cultural education specialist in the Museum's Cultural Resource Survey Program.



hidden treasures

Fabulous Fossils—The State Museum's

BY DR. ED LANDING

Dr. Ed Landing curates the Paleontology Collection at the New York State Museum. "Alpha paleontology," or documenting the variety of ancient life, is one aspect of his geologic research on New York's ancient sea levels and climates.

Dipleura dekayi, Middle Devonian age, c. 380 million years ago. Headless specimen from Madison County; described by Jacob Greene in 1832 in the oldest report on American trilobites, and donated to the Museum by the natural history enthusiast Governor DeWitt Clinton.

Complexity, elaborate features and great antiquity make trilobites a most interesting fossil group. They are common in ancient sea deposits worldwide. The earliest publication on trilobites in the United States included New York specimens now in the State Museum.

The 15,000 specimens in the Paleontology Collection's "trilobite wing" come from New York and 14 other states, as well as 21 foreign countries. Many trilobites were first described from New York, and many of the Museum's were

the first illustrated of these. Thus, they are important in evolutionary and taxonomic studies (e.g., "Do I really have the New York species here in Morocco?"). On-site visits and loans make these fossils available to researchers worldwide. Access to historically important specimens, often from sites now built over or otherwise lost, is only one reason why the Museum's fossils must be preserved through the centuries.

Modern paleobiologic studies of trilobites focus on how they lived, are related



Isotelus gigas, Late Ordovician age, c. 460 million years ago. Small, young specimen from Trenton Falls. Trilobites, as do lobsters and crabs, molted their hard parts with growth. Molted skeletons fall apart, so the recovery of a complete trilobite fossil means that the fossil likely represents a live animal that was buried in sediment and died. Complete trilobites at Trenton Falls are found upside-down. They were turned over by storms, could not right themselves, and were smothered by sediment.



Trilobites



and evolved. State Museum specimens are used to quantify the evolutionary relationships of trilobites and also show that they are closely related to arachnids (spiders and kin). Trilobites originated 519 million years ago—quite late in the “Cambrian radiation,” the evolutionary modernization of marine animals. They were a successful group for the next 300 million years.

Early trilobite species existed only an average one million years, and their fossils are used to give an approximate age of rocks. Their success may have

resulted from the ability of most to enroll and protect their soft undersides with their mineralized (limy) dorsal skeletons. However, trilobites declined with the rise of fish. The appearance of spiny trilobites during the evolution of jawed fish may have been an anti-predation strategy. The last trilobites died out somewhat before a mass-extinction 230 million years ago just before the “Age of Dinosaurs.” Their ecologic role in marine settings was taken over by isopods (a group known on land as pill bugs).

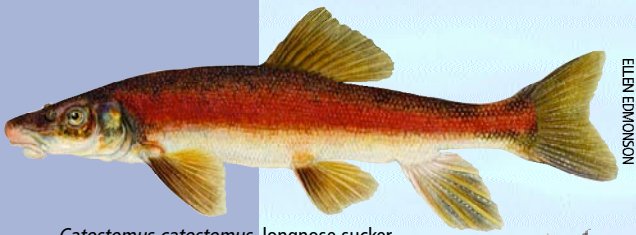
Phacops rana, Middle Devonian age, c. 380 million years ago. Specimens from Stafford that enrolled during a storm and were buried alive. The black color of New York trilobites indicates the specimens were buried deep in rocks, heated and baked into graphite (carbon). Areas where black trilobites are found never have petroleum. Compare these specimens with the light-brown *Dicranurus* from petroleum-producing Oklahoma (below).

Dicranurus elegantulus, Early Devonian age, c. 415 million years ago. A form with large spines, from Haragan County, Oklahoma; specimen illustrated in *The Trilobites of New York* (Cornell University Press, 2002) and purchased from G.J. Kloc of Rochester.

Coronura myrmecophorus, Early Devonian age, c. 410 million years ago. Pygidium (tail) from one of the largest-known trilobites; Kingston.



RON BARBER, NYSM



ELLEN EDMONSON

Catostomus catostomus, longnose sucker



ELLEN EDMONSON

Sander vitreus glaucus, blue pike

One Fish, Two Fish,

The hundreds of fishes in the state collection hold answers to important scientific questions

BY DR. ROBERT A. DANIELS

To the casual visitor, a fish collection can elicit mixed feelings—most people don't find 5,015 feet of shelving crammed with jars of specimens in preservative an attractive vista. Reactions to the State Museum's fish collection have ranged from abrupt about-faces to unbridled enthusiasm. However, the value of specimens often transcends their appearance. Each specimen in the Museum's collection, like those in all other natural history collections, is an archive of the species and the environmental conditions in which it lived. Beauty truly is in the scientific value.

Dr. Robert A. Daniels is assistant director of research and collections and curator of ichthyology. He studies interrelationships among species and between species and their habitat.

The fish collection holds useful, interesting and even economically important answers to important questions. With a collection as vast as the State Museum's at researchers' disposal, finding these answers often requires just a little bit of effort and ingenuity. Researchers from around the world use specimens from the collection, or information about those specimens, in many different types of studies (see sidebars). Of course, the collection is crucial for research done at the Museum as well.

I used specimens in the collection to examine change in environmental conditions in the Hudson River over the past several decades. Growth in redbreast sunfish reflects habitat conditions—the assumption is that increased growth is related to better environmental conditions. To undertake this study, I needed several individual redbreast sunfish from different time periods. In the

collection were a sufficient number of specimens from the 1930s, 1970s and 1990s.

My working hypothesis was that environmental conditions as reflected by the growth of the sunfish were worse in the 1970s. I found no difference in growth in the 1930s and 1970s. What I did find was that redbreast sunfish grew larger and lived longer in the 1990s. Degraded conditions existed over a longer period than I had initially expected, but in recent years the better growth statistics suggested that conditions in the river had improved.

Regional Focus, Worldwide Implications

The State Museum's collection is a regional one. Most of the specimens in the collection are from New York or the Northeast. This is by design and follows long-established collections' policies of the Museum. At this writing, the State Museum's collection



ELLEN EDMONSON

Catostomus utawana, summer sucker

contains 877,921 cataloged specimens of fish. These specimens include representatives from 861 taxa (including species, hybrids and unidentifiable specimens) collected from 14,467 sites in four oceans and on six continents. Specimens are from 16 countries and 32 states within the United States.

Despite its regional focus, the Museum's collection is among

the 20 largest fish collections in the country. That means, for some species, there are many specimens from many different sites across many years. For example, there are 24,098 specimens of pumpkinseed collected from 2,618 sites spanning 151 years. The oldest pumpkinseed specimen in the collection was collected in 1854; the most recent specimen was collected

in 2005. Comparative material is also extensive; the collection holds representatives of most of the other species within the sunfish family, for example.

The fish collection is dynamic and grows with additions from research projects conducted by the Museum staff, acquisitions from other state and federal



PATRICIA KERMAN

Umbra pygmaea, eastern mudminnow

Just what is the mudminnow in Manitou Marsh?

BY DR. ROBERT E. SCHMIDT, SIMONS ROCK COLLEGE

I have been studying fishes in the Hudson River for 25 years. In 1998, mudminnow—a small, rather secretive fish—was found in Manitou Marsh, Putnam County. I surveyed fishes in Manitou Marsh in 1992, and during my time there, I never caught mudminnow. For this reason, this new observation was very interesting.

A colleague, Tom Lake, and I visited Manitou Marsh in October 1998. Typically mudminnow in the tidal Hudson River inhabit supratidal pools, which are pools slightly above the high tide line. A large supratidal pool occurs just south of the causeway that crosses the marsh. We caught 31 mudminnows with one haul of the seine.

Two closely related mudminnow species occur in the

Hudson River, and they are distinguished by color pattern. The eastern mudminnow (native species) has horizontal lines on its side, and the central mudminnow (probably not native) has vertical blotches. The Manitou Marsh mudminnow did not display either pattern. Some specimens had faint horizontal lines, others were blotchy, and still others were indistinctly colored. Our theory was that we'd found hybrid variations.

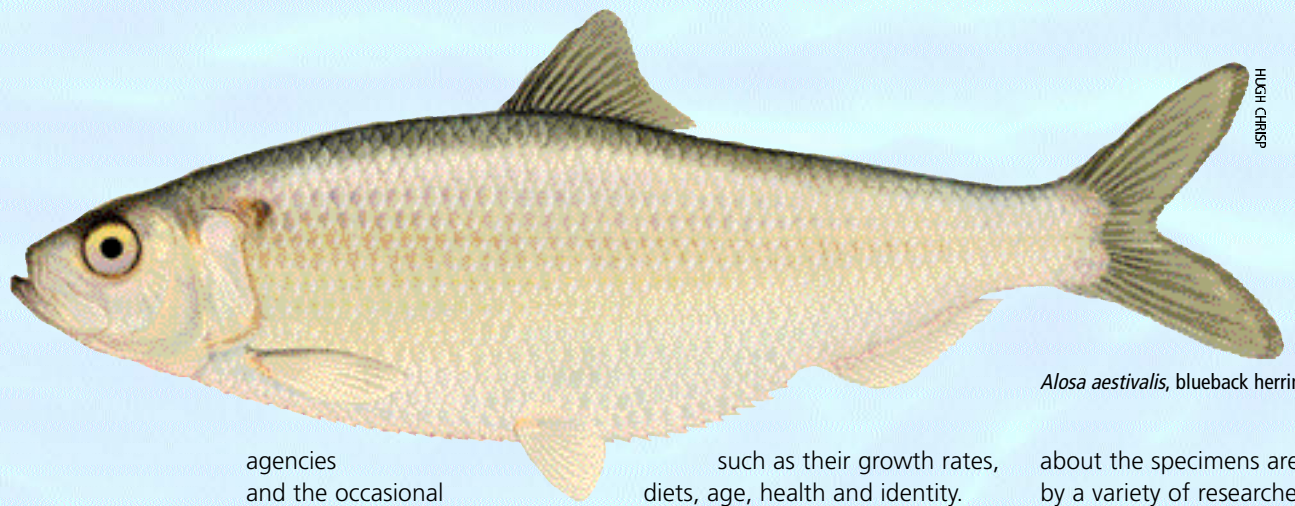
To examine this hypothesis, I needed different characteristics, preferably morphological, to separate the species. The State Museum fish collection has substantial holdings of both mudminnow species from New York and elsewhere. I gathered all the specimens I could find from the Hudson River drainage

and specimens from neighboring drainages. I found several specimens of eastern mudminnow from the type locality in Sparkill Creek, Rockland County, in the collection. I took measurements of several head and body dimensions and counted fin rays and scales on 124 mudminnows. The result of this was that I could now distinguish the two mudminnow species without resorting to color pattern.

When I compared measurements of the three groups, Manitou Marsh fish fell between the two species. This as a strong indication that the Manitou Marsh mudminnow is, in fact, a hybrid. The tidal Hudson River is the only place where these two species are sympatric, and I find it fascinating that upon meeting each other, they hybridize.

About the Collection

- Number of lots: 58,474 (a lot includes all specimens of one species collected at one site at one time)
- Number of lots from New York: 55,078
- Largest lot: 4,282 bay anchovy larvae from the Hudson River, collected in 1988
- New York county with fewest lots: Yates, with 52
- New York county with greatest number of lots: Orange, with 8,068
- Oldest specimen: Blind cavefish collected in 1843 in Kentucky
- Oldest New York specimen: Yellow perch collected in 1848 from Lake George
- Largest specimen: Lake sturgeon, 1,558 mm in length from the Saint Lawrence River
- Smallest specimen: Spot, 2 mm, from the Hudson River
- Number of 19th century specimens: 1,243 representing 123 species
- Family best represented: Minnows (family Cyprinidae) with 111 species
- Body of water best represented: Hudson River, with 375,808 specimens, representing 144 species
- Specimen from the site farthest from New York: trunkfish from the Indian Ocean, near Travancore (Trivandrum), India



HUGH CHRISP

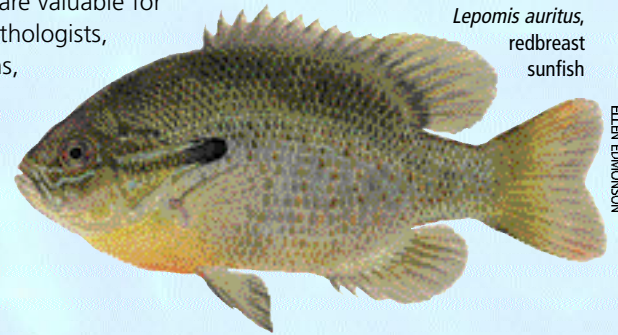
Alosa aestivalis, blueback herring

agencies and the occasional donation from a citizen. Large size, continued growth and the variety of species represented are key characteristics that define a collection and determine, to some extent, its importance to the scientific community.

The fish collection at the State Museum is a valuable scientific tool. Specimens provide information on the organisms themselves,

such as their growth rates, diets, age, health and identity. Since the specimens also shed light on the environment in which they lived, they are valuable for toxicologists, pathologists, natural historians, ecologists, zoogeographers, taxonomists and many others. Requests for information

about the specimens are made by a variety of researchers across the globe. All that is needed is a question!



Lepomis auritus, redbreast sunfish

ELLEN EDMONSON



Rick Morse, fish collection manager, adds a recently cataloged specimen to the growing state fish collection.

What is the effect of an invasive mussel on native fishes?

BY DR. NINA F. CARACO, INSTITUTE FOR ECOSYSTEM STUDIES

Some studies require specimens for comparisons. I am studying a key question in aquatic science: what is the relative importance of autochthonous (from within the river) and allochthonous (from outside the river) sources as food for fish and invertebrates? The Hudson River offers a perfect set of circumstances to undertake this study.

Natural abundance isotopes can be used to trace the relative importance of these different food sources. Studies suggest that external carbon is dominant in the Hudson River, but is not as important as food for young herring, striped bass

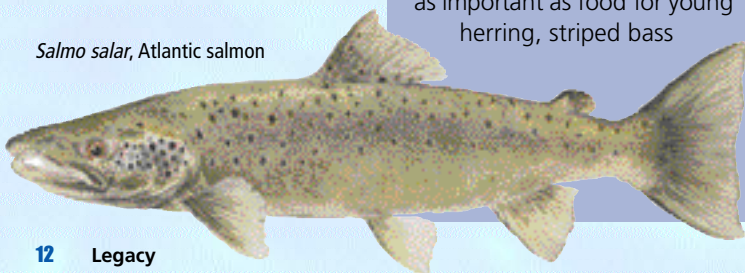
or resident fish. The invasion of the exotic zebra mussel may be responsible for this difference.

Zebra mussel invaded the lower Hudson River in the early 1990s. It feeds by filtering plankton, which are small plants and animals. Because it is such an efficient filter-feeder, phytoplankton (plant) biomass in the Hudson decreased, which means there was less food from in-river sources for young fish. Zebra mussel even more dramatically lowered zooplankton (animals) biomass. In the Hudson food web, zooplankton consumes allochthonous material and is, in turn, eaten by young fish and invertebrates. Dr. David Strayer and colleagues found that after the zebra mussel invasion there was a decline in young fish; this decline was more severe in wet years, when external

inputs are greatest. Because the Hudson River fish populations support important sport and commercial fisheries, it is important to be able to explain changes in the number of fish.

To test if the source of food for young fish has changed since the invasion of zebra mussel, I need to compare diets from fish caught before and after the invasion. Post-invasion fish are easy to secure, but only museum collections hold specimens caught before the invasion. I will examine young blueback herring and striped bass from similar locations and times of year in the pre-zebra mussel period and the post-zebra mussel period. Without museum collections, key studies examining changes in the Hudson River fish communities would not be possible.

Salmo salar, Atlantic salmon



ELLEN EDMONSON



Brass pocket sundial, A87.5.136.19, KeyCorp, 1.5 inches in diameter

Albany as a Military Headquarters

Archaeological collections contain evidence of cooperation and conflict 250 years ago

BY DR. CHARLES L. FISHER

During the French and Indian War, the city of Albany was the staging ground for the British army in their annual campaigns against the French in Canada. Since 1986, archaeological excavations in downtown Albany and along the Hudson riverfront have produced thousands of artifacts from that time period. The examination of these material remains from the soldiers' off-duty lives, and identifying their impact on civilians, helps us to understand the events that shaped our modern world.

The British built new fortifications in Albany following the French victory at Oswego in 1756. This victory made Albany the obvious target of the next French advance from the west and also from their post at Fort Carillon (Fort Ticonderoga) about 90 miles to the north. The French success at Fort William Henry in 1757, which placed the French army less than 60 miles north of Albany, only heightened the residents' fear of an imminent attack.

The military buildup in Albany included the construction of a new

city wall and buildings such as guardhouses, barracks, a hospital, stables, magazines and storehouses. About 1,400 officers and troops were quartered in the homes of nearly 1,500 city residents, and many other soldiers were encamped outside of the city. Approximately 30,000 soldiers passed through Albany during this conflict, and many civilian refugees came to live within the secure, walled city.

Archaeological collections illustrate the impact of the British on the traditional Dutch population of Albany at this time. The presence of large numbers of soldiers with money to spend was an opportunity for the merchants. A consumer revolution took place as mass-produced English goods were acquired, used and discarded. Ceramics, glass, clay tobacco pipes, buckles, buttons and shoes—what Samuel Adams referred to as the "Baubles of Britain"—increased in number during the 1700s.

The soldiers were actively engaged in the local economy through cottage-production. Wampum, shoes and baskets were

made, or repaired, by off-duty soldiers. In the city, the soldiers had access to a variety of material goods and food not always present in the frontier forts and on the battlefields.

Rum was in great demand and large quantities were purchased by the military. The army used rum as a reward for extra duty, and it was believed that rum contributed to the health of the soldiers. The first rum distillery in Albany was constructed just outside the north wall of the city during the French and Indian War. This location enabled the distillery to ignore the city ordinance of 1756 that prohibited selling rum.

The Dutch residents of Albany were never completely "Anglicized," and maintained their language and many of their customs. Their material world, however, changed during the French and Indian War to include many more English items. Ironically, the increase in British goods did not help to maintain control over the colony; instead, it helped to shape a rebellion among the new consumers.



Top: Buff earthenware chamber pot, slipped, trailed and dotted A87.05.500.2, KeyCorp, 6.5 inches in diameter at rim, 5 inches high

Middle: Wampum, shell beads, approximately .25-inch in length from Albany excavations

Bottom: Stone foundation of rum distillery with wooden vats and the stone base for the still in the background

Dr. Charles L. Fisher is the curator of historical archaeology at the New York State Museum.

Time in the field connects natural science artists with the environment and the community



Manbu Saito, mushrooms

Drawn to Nature

BY MARIA C. SPARKS

While it's difficult for natural history artists to find a place in the field to work for extended periods, an artist-in-residency program co-sponsored by the New York State Museum and the Edmund Niles Huyck Preserve has offered such an opportunity for 10 years.

COM.EN.ART (COMMunity. ENVIRONMENT.ART), begun in 1995, offers scientific and natural history illustrators time and space to work at the Huyck Preserve in Rensselaerville, 28 miles south-

west of Albany. The not-for-profit preserve, one of the oldest biological research stations in the United States, offers artists 2,000 acres of diverse ecology for their two-week sabbatical. The artists are provided with housing and studio space at the preserve and have the option of working with scientists or conducting studies for their own work.

Scientific and natural history illustrators depict the results of scientists' work for reproduction in scientific journals, textbooks, and educational materials. They

usually receive a preserved specimen from which to work. In order to imagine and recreate an image of the living organism, they must have some field experience on which to base their art. Natural history artists, just like biologists, need concentrated time to work outdoors to gain this experience.

"There is no substitute for being in direct contact with and having time to observe nature," says Patricia Kernan, the State Museum's scientific illustrator and co-founder of COM.EN.ART.



*Sphinx Moth
Hyalocampa ornata*



*Civil Damselfly
Erythemis viridis*



*Tiger Swallowtail
Papilio glaucus*

Mary-Ellen Didion, three insects

Through artistic work, a natural history artist tells the biological story of a place over time. The original works completed during the COM.EN.ART experience represent a record of what has happened at the Huyck Preserve.

“The appeal and the challenge of the program is time away from the usual demands of making a living. It can be very daunting as well as exhilarating to face two weeks with no excuses not to work and none of the comforts of home.” The idea for COM.EN.ART came to Kernan and Virginia Carter, a resident of Rensselaerville, from their own field experiences, independently and on grants, in many parts of the world.

Two-time participant Scott Rawlins, a professor at Arcadia University in Glenside, Pa., says that with so much to study and learn at the preserve, it was necessary to set parameters during his two weeks there. “In both cases, it was really a great opportunity for the first time in my life to think about what the traditional artist has to do in terms of juggling time.” The COM.EN.ART experience also enabled him to better communicate to his students the importance of developing discipline when working as a freelance artist. Three of his students are among the more than 40 artists who have participated in COM.EN.ART.

Each year, up to six natural history artists are selected to participate in the program, and they may schedule their stay anytime from May through October. In exchange for living and working space, the artists give a work of art to the Huyck Preserve with the State Museum having limited reproduction rights. The artists also make a contribution to the community, usually by conducting an hour-long presentation or workshop at the Huyck Preserve or by contributing an illustration

to a portfolio of scenes from the preserve.

Since the start of the program, approximately 50 original works have been donated to the preserve. Many of those works will be displayed at the State Museum in 2006 in conjunction with the *Focus on Nature IX* exhibition. The biennial *Focus on Nature* exhibition showcases illustration as a way to communicate the observations of scientists and artists.

Through artistic work, a natural history artist tells the biological story of a place over time. The original works completed during

the COM.EN.ART experience represent a record of what has happened at the Huyck Preserve, and each of the images produced and donated generates a story about biological conditions there, says Kernan. “There are similar programs that invite nature artists to come to a specific place to work for a period of time,” she says. “This one is unique in that it is based on the idea of exchange to the benefit of all and that it focuses on the science as much as the art. The experience has been terrific for everyone concerned: the artists, the community and the preserve.”



Andrea Sulzer, hemlock forest landscape



Maria C. Sparks is managing editor of *Legacy*. Patricia Kernan, the New York State Museum's scientific illustrator and the co-founder of COM.EN.ART, contributed to this article.

Jessie Salmon, green frog

A New Home for a Prized Possession

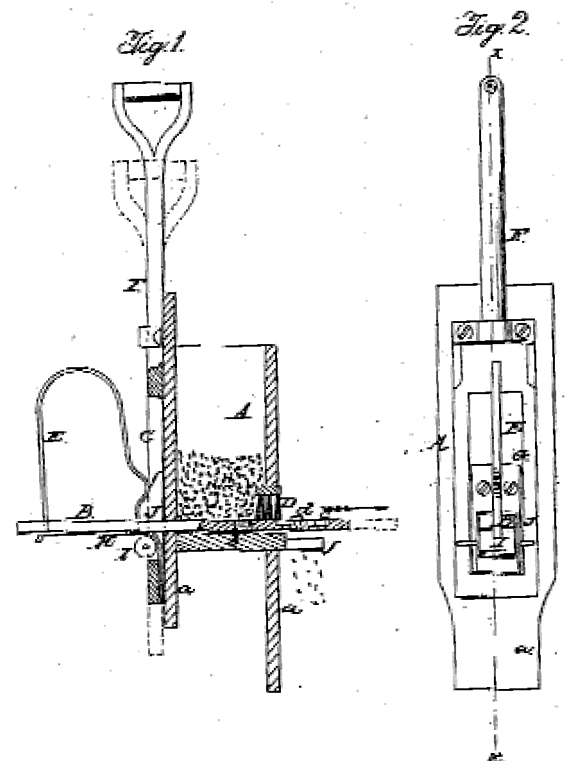
BY GEOFFREY N. STEIN

Charles E. Lipe (1850–1895) grew up on a Fort Plain farm. As a teenager, he designed and built a prototype hand corn planter. Constructed of wood, with some leather and metal parts, the device resembles planters used in much of the 19th and 20th centuries. The U.S. Patent Office awarded Lipe patent No. 68,760 in 1867, acknowledging a “new and improved device for dropping corn, and it consists in a novel construction and arrangement of parts, ... whereby the desired work may be done very expeditiously and in a perfect manner.”

Charles Lipe left his father’s farm for industrial Syracuse, where he opened a machine shop. The C.E. Lipe Company did development work on broom machines, cigar manufacturing equipment, a milling machine, rock drills, bean and rice hullers, and more. Lipe’s prototype corn planter, however, remained on the farm. For almost 150 years after he left, it hung in a farmhouse storeroom.

In 1891, Charles Leneker arrived at the Lipe farm as a sharecropper and in 1917, he purchased the property. Leneker’s son, Arthur (1899–1978), was the next farmer. He told his daughter, Evelyn Koval, that the planter prototype always hung in the second-floor storage room during his lifetime. Evelyn and her husband Joseph Koval were the last of the Leneker family to reside on the farm. They eventually remodeled the storeroom into living space, and when they left for Herkimer in 2003, they took the Lipe prototype with them. Recently, the Kovels gave the Lipe planter to the State Museum, where the artifact—except for a deteriorated leather strap—remains just as Charles Lipe made it.

The Lipe patent text notes, “The person in using the device places the longer leg or foot *a* of the box on the ground, where the seed (a dropping of corn) is to be deposited, and pushes down the handle *F*, which causes the slide *B* to be forced out from the box *A* in the direction indicated by arrow 1 in consequences of the connection formed between the slide and the handle by the strap *H* passing over the roller *I*, and the slide *B* in being thus moved causes the seed-opening *c* to pass out from the box *A*, underneath the cut-off brush *D*, which takes off the superfluous seed, so that a number of grains or kernels which may only be contained in *c*[*e*?] flush with the upper surface of the slide *B* will be discharged, and these grains or kernels drop upon a beveled or wedge-shaped projection, *f*, which may be an extension of the bottom *b*, said projection scattering the seed. On raising the handle *F* the spring *E* throws back the slide *B* to its original position so that the seed-opening *c* will pass within the box *A* and be re-filled with seed for a succeeding operation.”



Geoffrey N. Stein, a senior historian at the New York State Museum, curates New York State Museum collections related to agriculture, transportation, communications, industry, firefighting and medicine.

Patent drawings or models don’t have to resemble products eventually available for sale. What’s important is that the drawings or models demonstrate the mechanism for which a patent is sought. Comparing the Lipe planter (above) and the patent drawing (at right) reveals identical objects. Each piece in the drawing has its counterpart in the actual machine. While unmarked, the prototype planter is the design for which Charles Lipe was awarded his patent. The patent drawing reflects every facet of the prototype.



When the sun goes down, the Museum comes alive!

Camp out at the Museum and imagine what life was like as an immigrant arriving at Ellis Island or a member of an Iroquois longhouse. Experience the awesome, interactive programs *Once Upon a Time in New York* and *Life in a Longhouse* as fun-filled, unique ways of learning at the Museum. Perfect for scout troops, community groups and school classes, the Camp-In adventures take place on Friday and Saturday nights throughout the school year.

FOR MORE INFORMATION ABOUT CAMP-IN,

send an e-mail to nysmpp@mail.nysed.gov
or call 518-402-5019.

calendar highlights

EXHIBITIONS

**Bank of America Great Art Series
The World in Brooklyn: Selection from
the Brooklyn Museum of Art**
November 19, 2005 – February 26, 2006

Sports: Breaking Records, Breaking Barriers
October 15, 2005 – January 8, 2006

Miracles: New York's Greatest Sports Moments
October 15, 2005 – March 26, 2006

MUSEUM SERIES

**The Adirondacks: Research and Collections
at the State Museum**

Wednesdays, September – December
(No programs on October 12 and November 23)
7 p.m. in the Museum Theater

- **1.3 Billion Years of Adirondack Geology**
- **Summer Sketches: Rufus Grider at Piseco Lake**
- **Largemouth Bass: The End of Angling as We Know It**
- **Obscure Beauty: Wild Orchids in the Adirondacks**
- **Mining History of the Adirondacks**
- **The Adirondack Great Camps and Their Furnishings**
- **Adirondack Lake Acidification: Fact and Fiction**
- **Top 10 Little-Known Facts About Black Flies**
- **Minerals—Tools to Determine the Composition and Evolution of Fluids in the Crust**
- **Adirondack Wildlife—500 Dynamic Years**

Biology and Conservation

Wednesdays, in October
Noon in the Museum Theater

- **Science on the Fly! Loon Migration: Linking People and the Environment**
- **From Montauk to Niagara Falls: Biodiversity, Threats and Conservation in State Parks**
- **Important Bird Areas of New York: The Second Edition**
- **The New York Flora Project**



MUSEUM TOURS

**Sports: Breaking Records, Breaking Barriers
Gallery Tour**

Selected Saturdays and Sundays, October – December

**Behind-the-Scenes Tour of Research Labs
and Collection Areas**

Wednesday, September 21
Museum Members Only

FAMILY PROGRAMS

Furry Tales and Touchables

Saturdays—September 17, October 1 and 15,
November 5 and 19, December 3 and 17
* Children only

Creative Art Days at the Museum

Saturdays—September 17, October 15,
November 19, December 17

Trash to Treasures

Sundays—September 11, October 9, November 13,
December 11

Family Fun Weekends

October 1–2, November 5–6, December 3–4

For a complete schedule of exhibitions, programs and events, see *The Museum Calendar* or visit

www.nysm.nysed.gov/calendar/