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## Toils and Perils of Scientific Publishing in the Late Eighteenth and Early Nineteenth Centuries

Eileen Snyder

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VOLUME XXIV

NUMBER ONE

SPRING 1989

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# Toils and Perils of Scientific Publishing in the Late Eighteenth and Early Nineteenth Centuries

BY EILEEN SNYDER

It is perhaps not realized by the modern armchair naturalist what hardships attended his 'explorer naturalist' predecessor in the early 1800s. In the George Arents Research Library there is an intriguing—indeed, quite outstanding—group of volumes, landmarks in the history of the natural sciences, by American, British, and French botanists, ornithologists, ichthyologists, entomologists, and herpetologists. A study of the various prefaces, introductions, and accompanying advertisements reveals the overwhelming problems that not only attended every fact-gathering expedition, but seemed as well to plague every stage in the publication of the new materials.\* Nevertheless, undaunted, these explorers were inspired to do what had not been done before, namely, a firsthand, on-site description of natural history. They disdained to rely on the reports of others or on preserved specimens. "I always did them while just gathered, and the animals, particularly the birds, I painted them while alive", wrote the naturalist Mark Catesby, who explored the Southern colonies in the 1720s. By foot, by canoe, by horse, by ship, toting guns, pencils, notebooks, brushes, paints, paper, and bottles, these discoverers, always zealous to push back scientific frontiers, traveled thousands of miles into unexplored wilderness. This was an era when, all over the world, people seemed stirred to describe natural history. The questing spirit was irrepressible.

\* All titles of books mentioned are in the collections of the George Arents Research Library. The separating ornaments have in each case been taken from the work of the author immediately following. The tailpiece, a *Bufo clamorus* (ventral view), comes from Holbrook's *North American Herpetology; or, A Description of the Reptiles Inhabiting the United States*.

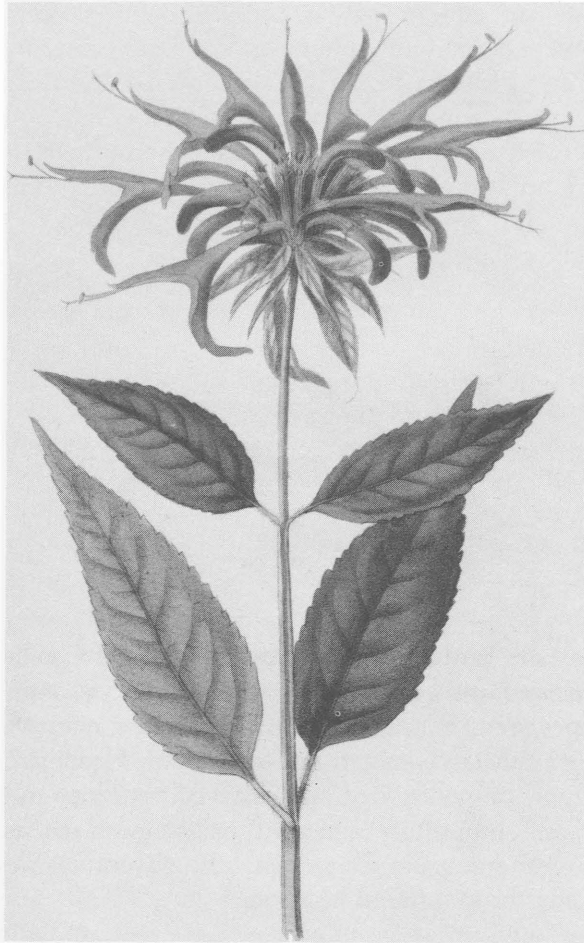
Frederick Pursh, a German botanist and an associate of the botanist Benjamin Smith Barton in Philadelphia, grandiosely described the boundaries of his proposed subject as being the "flora of North America". At the time of his expressed ambition, little of the American interior had been botanically described. Besides his own gatherings, Pursh described in his work a small collection of plants brought back by the Lewis and Clark expedition, because of which he subsequently received criticism for having treated as his own findings. However, he apparently did give appropriate credit, for in the preface he told of receiving the plants from Meriwether Lewis himself and, in his descriptions of the plants, distinguished them by the words "v. s. in Herb. Lewis" after their names. Pursh recounted his experiences in his *Flora Americae Septentrionalis; or, A Systematic Arrangement and Description of the Plants of North America* (two volumes, London, 1814).

He expressed his determination with conviction:

Accordingly, in the beginning of 1805, I set out for the mountains and western territories of the Southern States, beginning at Maryland and extending to the Carolinas, (in which tract the interesting high mountains of Virginia and Carolina took my particular attention,) and returning late in the autumn through the lower countries along the sea-coast to Philadelphia. The following season, 1806, I went in like manner over the Northern States, beginning with the mountains of Pennsylvania and extending to those of New Hampshire, (in which tract I traversed the extensive and highly interesting country of the Lesser and Great Lakes,) and returning as before by the sea-coast.

Both these tours I principally made on foot, the most appropriate way for attentive observation, particularly in mountainous countries; travelling over an extent of more than three thousand miles each season, with no other companions than my dog and gun, frequently taking up my lodging in the midst of wild mountains and impenetrable forests, far remote from the habitations of men.

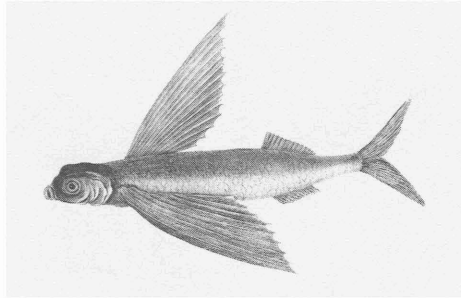
Pursh's lonely journeys through wild terrain demonstrate the tenacity and resourcefulness of all these adventurers who did not allow themselves to be deterred by adversity. Neither storm nor illness,



*Monarda kalmiana*. "In boggy woods in black rich soil, near Onondago [sic] and Oswego, New York": Frederick Pursh in his *Flora Americae Septentrionalis; or, A Systematic Arrangement and Description of the Plants of North America*, volume I (London: White, Cochrane, and Co., 1814), page 16.

brigand nor marauding Indian, ferocious beast nor voracious insect, hunger, thirst, shipwreck, nor impecuniousness stopped their drive to discovery, publication, and fame. The explorer-naturalist needed a variety of abilities to succeed (and not all lived to finish their ambitious projects even so). Crucially, he required the necessary scientific background to know what might add knowledge to his chosen discipline, how to identify it, and where to find it. Also important to his success were the skills to survive in wild areas; health to per-

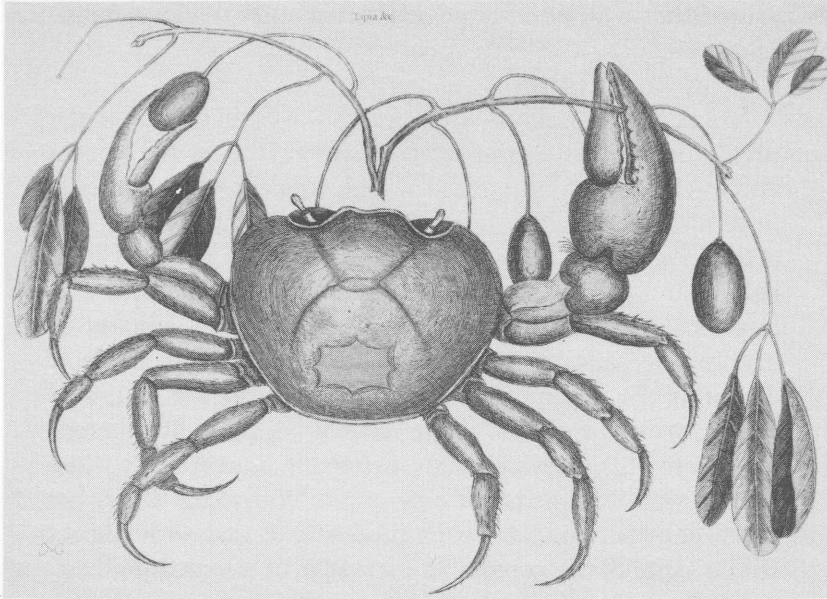
severe in the sometimes appalling conditions; artistic capabilities to record his findings; and a nose for business and dealing with people, so that he could see his finished book financed and through publication. At this time most works in natural history relied on subscribers to underwrite the costs of publication. Accordingly, the author (including John James Audubon for his *The Birds of America* [London, 1827–1838]) or his agent had to sell subscriptions before the work could be published.



Mark Catesby, author of *The Natural History of Carolina, Florida, and the Bahama Islands, with Observations on the Soil, Air, and Water* (two volumes, rev. ed., London, 1754), was a man who demonstrated the necessary characteristics to succeed. Heading off into the wildest terrain, he confronted and survived hardships to bring back completed and beautifully executed paintings of theretofore unknown plants and animals. On occasion his adventures were extraordinary. In a letter to a friend he wrote:<sup>1</sup>

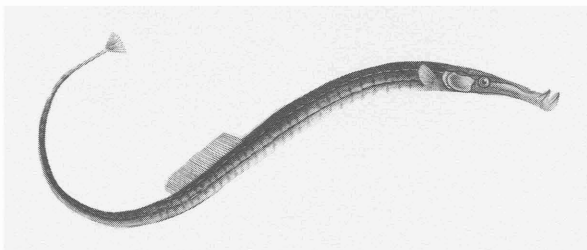
An odd accident happened last February. A negro woman, making my bed a few minutes after I was out of it, cried out: “a rattlesnake!” We being drinking tea in the next room, surprised with the vehemence of the wench’s bawling, went to see the cause and found a rattlesnake actually between the sheets in the very place where I lay, full of ire, biting at everything that approached him. Probably it crept in for warmth in the night, but how long I had the company of the charming bedfellow, I am not able to say.

1. Joseph Kastner, *A Species of Eternity* (New York: Knopf, 1977), 16–17.



*Cancer terrestris*. Illustrated by Mark Catesby, from his *The Natural History of Carolina, Florida, and the Bahama Islands*, volume II, revised (London: C. Marsh, 1754), page 32.

Catesby was a self-taught English artist and ornithologist, who spent twenty years in North America traveling and recording with pen and brush. After so long a time, he suffered the loss of his once enthusiastic patronage, yet eventually saw his volumes through every stage of publication including the engraving and coloring of his own plates.

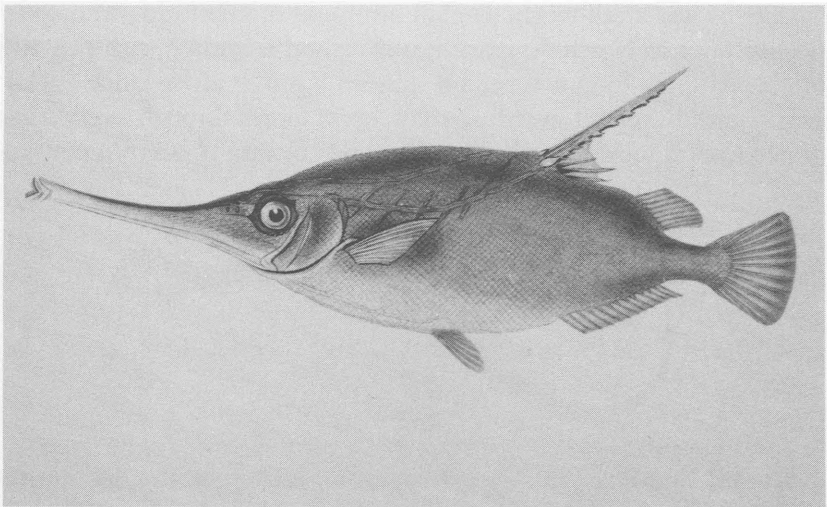


Edward Donovan, British ichthyologist, undertook the description of British fishes in *The Natural History of British Fishes* (five volumes, London, 1802–1806), a task, given his scientific perfectionism, not exempt from difficulty. Not satisfied with the decomposing offerings that enthusiastic friends landed upon his desk, he took to sea in



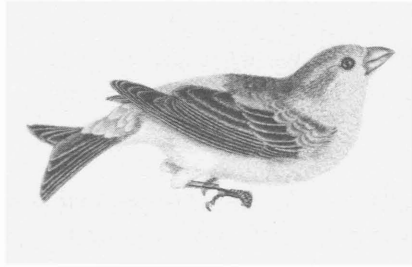
order to gather a live, representative collection whose natural irridescence he could paint with accuracy.

It was not enough to visit those coasts, but to seek the objects in request in the depths and recesses of the ocean; and in the accomplishment of which [the author] could only avail himself of such opportunities of venturing to sea as the accommodation of the fishing craft, or open boats of such remote and unfrequented places, would allow. Those, it may be conceived, were not at all times calculated for comfort or even convenience, nor wholly free from peril. This mode of procuring the specimens proved, however, in the end, successful; in the space of a few months, devoted at different periods to this purpose, many extremely scarce and curious articles were obtained, not only of the Ichthyology kind, but in every other class of marine productions; and with respect to the fishes of the country in particular, it afforded the best, if not the only means of ascertaining with accuracy the precise characters of those perishable beings. By this means also the author was enabled to delineate a variety of the more



*Centriscus scolopax* (trumpet fish). Drawn by Edward Donovan, from his *The Natural History of British Fishes*, volume III (London: Printed for the author and F. and C. Rivington, 1804), plate 63.

brilliant species in the highest state of perfection, and while they yet glowed with the vivid hues of life. This was assuredly a matter of serious importance, as it is obviously known that nothing can be more fugitive in general than the colours of the more resplendent creatures of this tribe, many of which while alive and vigorous display the most fascinating emanations of colour; but snatched from their native element, those fervid hues alternately fade and revive with the transitory struggles of life, and, evanescent as their breath, are lost entirely in the expiring gasp of death.



Alexander Wilson, Scots-American ornithologist, traveled thousands of miles in order to publish a “description and representation of every species of our native birds, from the shores of St. Laurence to the mouths of the Mississippi, and from the Atlantic ocean to the interior of Louisiana . . . the whole Ornithology of the United States”. His monumental *American Ornithology* (nine volumes, Philadelphia, 1808–1814) was the first work in science to be published totally in America—even to the engraving of the plates and the manufacturing of the paper.

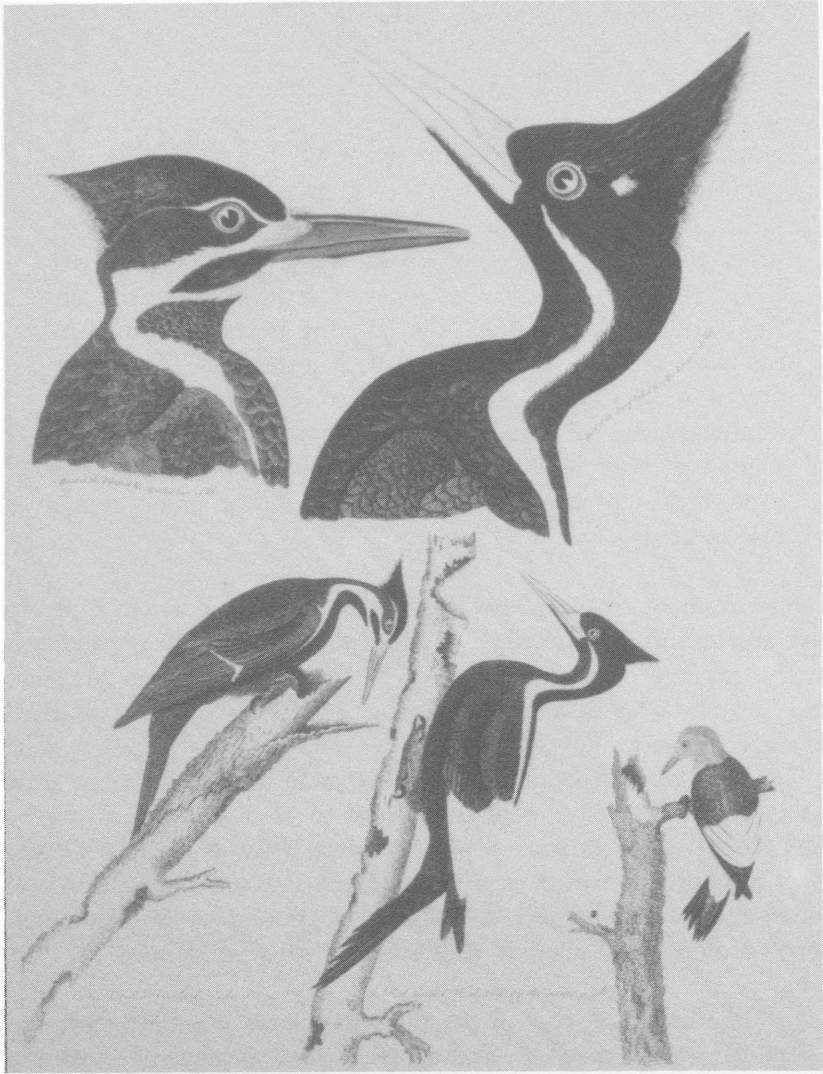
It had been a sore point with Wilson that so much of North American natural history had been described by Europeans and published in Europe. In his preface to Volume III, Wilson enlisted a network of observers to send him their sightings and descriptions of unusual birds. “By such combined exertions, and reciprocity of information, we shall do honour to this branch of science; and be enabled to escape, in part, that transatlantic and humiliating reproach, of being *obliged to apply to Europe for an account and description of the productions of our own country.*”

In order to realize his ambitious and expensive undertaking, Wilson tramped the country. As he said in the preface to Volume III:

Should there appear in *some* of the following accounts of our native birds, a more than common deficiency of particulars as to their manners and migration, [the author] would beg leave to observe, that he is not engaged in copying from *Museums* the stuffed subjects they contain; nor from books or libraries the fabulous and hearsay narratives of *closet naturalists*. A more laborious, and, as he trusts, a more honorable duty is prescribed him. He has examined the stores of living Nature for himself; and submitted with pleasure, to all the difficulties and fatigues incident to such an undertaking. Since he had last the honor of presenting himself before the public, he has traced the wilds of our western forests, alone, for upwards of seven months; and traversed, in that time, more than three thousand miles, a solitary, exploring pilgrim.

Not only did Wilson make his own pen and pencil sketches of his subjects—"the feathered tribes"—he was forced to travel many more thousands of miles to enlist subscribers to the venture. He eventually secured 458 subscribers who paid \$120 each for the set of the projected nine volumes. But, despite all his efforts, delays plagued him and expenses of publication rose. In several of the prefaces we find statements of regret over the delay of publication. In Volume III, for example:

Unforeseen and unavoidable circumstances, which it is unnecessary to recapitulate, and over which the author had no control, have retarded the publication of the present volume beyond the usual and stated period. Complaints and regret, for what is irrecoverable, would be as unavailing, as apologies for what could not be prevented, would be improper. [The author] will only on this subject remark, that a recurrence of similar obstacles not being likely to take place, and the plates of the fourth volume, now in the hands of the engraver, being in considerable forwardness, every exertion will be made, consistent with the correct execution of the work, to atone for past delays, by its early and prompt publication.



Ivory-billed Woodpecker, Pileated Woodpecker, Red-headed Woodpecker.  
"Drawn from Nature" by Alexander Wilson for his *American Ornithology*;  
or, *The Natural History of the Birds of the United States*, volume IV (Philadelphia:  
Bradford and Inskeep, 1811), plate 29.

Again, in Volume IV, he was regretful but hopeful:

The success which [the author] has met with in his late shooting excursions and the arrangements made with the engravers and others engaged in the work, will enable him to publish the remaining volumes with more punctuality than it has hitherto been possible for him to do. At the same time, the correct execution of the plates will be rendered more secure, by the constant superintendance [sic] of the author; and by the whole of the coloring being performed in his own room, under his immediate inspection. The great precision requisite in this last process, and the difficulty of impressing on the mind of every one whose assistance was found necessary, similar ideas of neatness and accuracy, have been a constant source of anxiety to the author, and of much loss and delay.

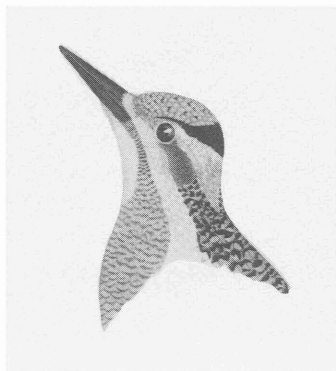
Improvement of the plates by printing them in color in order to give greater softness and effect to the plumage made a heavy addition to the expense of publication. But Wilson was intent on his goal, and “no obstacles of a mere pecuniary nature have been permitted to stand in the way”.

The hardships of preparing this remarkable work in only ten years (Audubon took thirty) were so wearing to his constitution that he died (1813) at age forty-seven while Volume VIII was in press. George Ord, his devoted friend, saw that volume through publication and supervised the completion of Volume IX. As Ord wrote in his preface to Volume VIII about Wilson’s unremitting problems:

The historical part of the present volume was fully completed and printed off; and all the plates, except one, were engraved, under the superintendence of the author himself. But from the defection of those on whom he had relied for assistance in the coloring of his subjects, and the great difficulty of immediately procuring others competent to the task, that branch of the work did not keep pace with the rest; and hence the publication of the volume has been delayed, by causes beyond the control of those on whom, at Mr. Wilson’s death, his affairs devolved. But this delay, we trust, has

been of benefit to the work, as it enabled us to employ an artist who formerly gained the confidence of the author by his skill and attention to the duties assigned him; and who has given assurance of continuing his assistance until the whole is completed. With such a coadjutor, our labors in that department will be considerably lightened; and with deference we hope that the public will not so readily perceive the absence of that hand, whose delicate touches imparted hues and animation to the pictured “denizens of the air,” which might almost vie with the interesting originals themselves. . . . Mr. Wilson intended coloring the chief part of the plates himself; but that design, which sprang from the most refined sense of duty, and so fondly cherished, he did not live to accomplish.

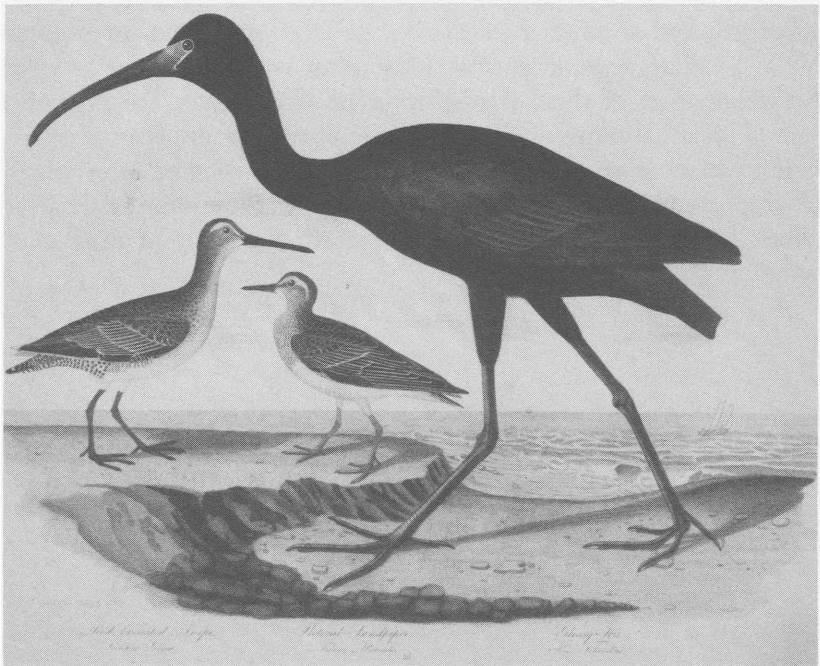
As Wilson said of himself in the preface to Volume III: “What with truth and accuracy he *could* do, he has done”; and, in Volume IV: “. . . that, without patron, fortune, or recompence, he brought the greater part of these [birds] from the obscurity of ages, gave to each ‘a local habitation and a name’—collected from personal observation whatever of their characters and manners seemed deserving of attention; and delineated their forms and features, in their native colors, as faithfully as he could, as records, at least, of their existence”.



In 1822 ornithologist Charles Lucien Jules Laurent Bonaparte (Prince of Canino and Musignano, nephew of Napoleon) came to Philadel-

phia, where he studied American ornithology. Although Wilson had died nine years earlier, Bonaparte became a disciple of his work and determined to continue it with an extensive supplement. To illustrate this supplement, entitled *American Ornithology; or, The Natural History of Birds Inhabiting the United States, Not Given by Wilson* (four volumes, Philadelphia 1825–1833), he engaged Alexander Lawson, who had engraved all of Wilson's work and was reputed to be the foremost engraver of this time in America. In his preface, Bonaparte wrote of Lawson:

With the birds always before him, Mr. Lawson has transferred our drawings to the copper with his usual unrivalled accuracy and ability. This artist, who acquired so much dis-

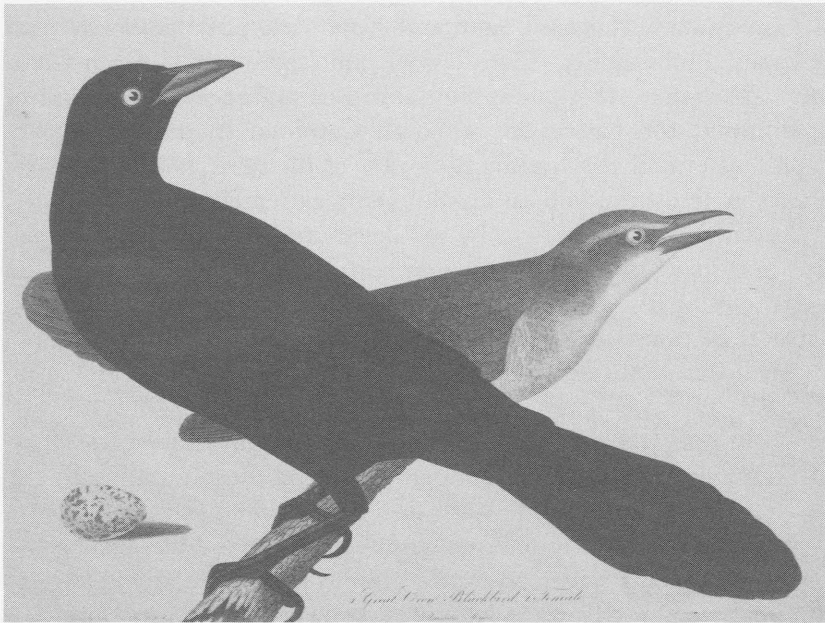


Red-breasted Snipe, Pectoral Sandpiper, Glossy Ibis. Drawn by Titian Ramsey Peale for Charles Lucien Bonaparte's *American Ornithology; or, The Natural History of Birds Inhabiting the United States, Not Given by Wilson*, volume IV (Philadelphia: Carey and Lea, 1833), plate 23.

inction by the engravings in Wilson's work, has become perfectly master of his art, and so intimately acquainted with the various parts of a bird, that he may be justly styled the first ornithological engraver of our age.

Lawson, for his part, was so assured of Wilson's scientific exactness and certitude that when Bonaparte wanted him to engrave some drawings of birds by John James Audubon for the supplement, Lawson refused on the ground that Audubon's work was art, not science. The single exception was "The Great Crow-Blackbird" in Volume I, the first bird painting of Audubon ever to be engraved and published. For his own *The Birds of America*, Audubon was obliged to go to England where his dramatic, animated approach had a more cordial reception.

However, Bonaparte, being himself an ornithologist, was more ad-

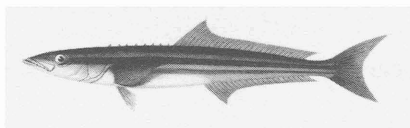


Great Crow-Blackbird. Drawn by John James Audubon and Alexander Rider for Charles Lucien Bonaparte's *American Ornithology; or, The Natural History of Birds Inhabiting the United States, Not Given by Wilson*, volume I (Philadelphia: Carey, Lea and Carey, 1825), plate 4.



miring of Audubon's achievements. In the preface to his second and third volumes, he commented:

Mr. J. J. Audubon, painter-naturalist, who has devoted twenty years of his life to studying nature in the forests of the West, has gratified us with the sight of several drawings of new species which will appear among the plates he is now engaged in publishing. It is greatly to be wished, for the advancement of American Ornithology, that while his work, so magnificent, but necessarily so slow in coming forth, is preparing, a scientific abstract of his discoveries should be drawn up without delay.

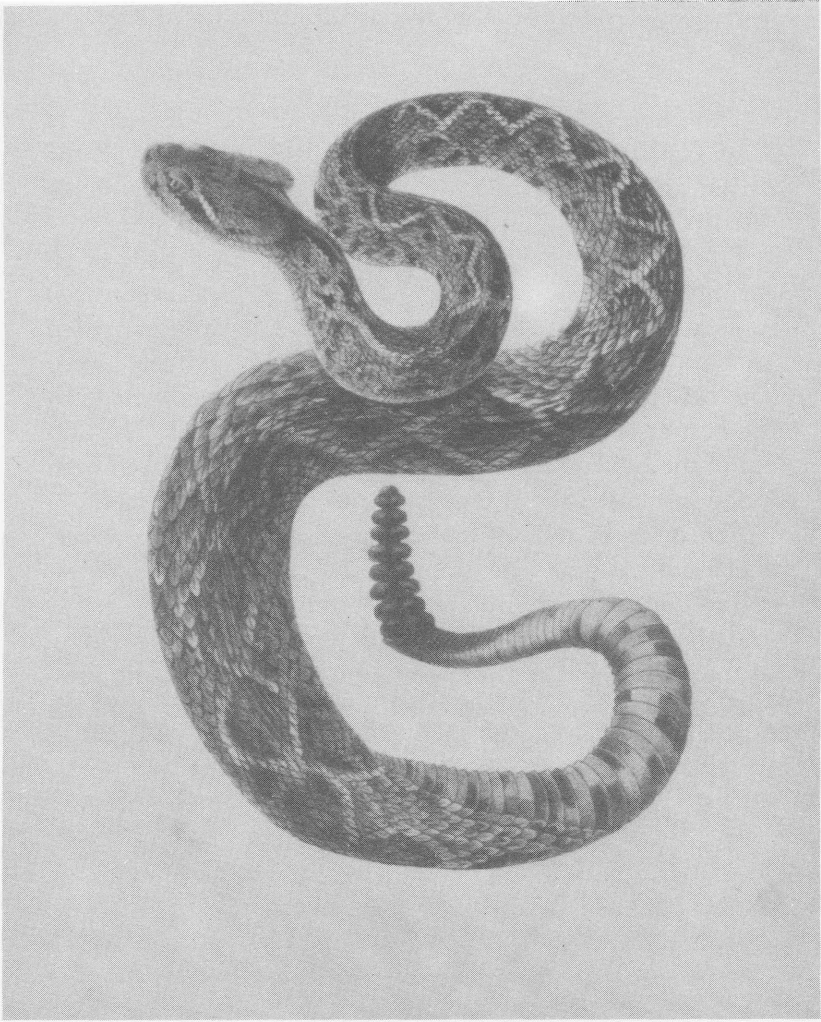


John Edwards Holbrook, author of *North American Herpetology* (two volumes, Philadelphia, 1836–1838), and *Ichthyology of South Carolina* (Charleston, 1860), was a physician-naturalist and a professor of anatomy at the University of South Carolina. Internationally accepted as one of the leading zoologists of his time, his publications are today rare—the one on reptiles being extremely valuable.

As did Pursh and Wilson, he too determined to tackle a vast topic. But in spite of his professional standing, Holbrook suffered from the exigencies of his time. Although he did not travel far afield for his subject, he nevertheless encountered his own peculiar hardships.

About his *North American Herpetology* he wrote:

In undertaking the present work I was not fully aware of the many difficulties attending it—indeed they could hardly have been anticipated. With an immense mass of materials, without Libraries to refer to, and only defective Museums for comparison, I have constantly been in fear of describing animals as new that have long been known to European Naturalists. In no department of American Zoology is there so much confusion as in Herpetology. This is to be traced partly to the earlier Naturalists, partly to the practice of describing from specimens preserved in alcohol, or from prepared skins.



*Crotalus adamanteus*. Illustrated by J. Sera for John Edwards Holbrook's *North American Herpetology; or, A Description of the Reptiles Inhabiting the United States*, volume II (Philadelphia: J. Dobson, 1838), plate 16.

I have endeavoured to avoid error in this respect by describing in every instance from the living animal, and often after a comparison of many individuals.

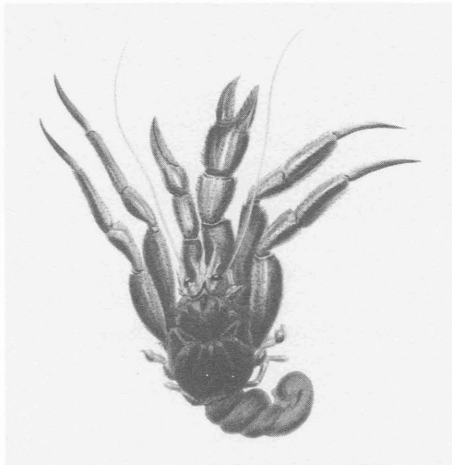
His troubles continued, as he recounted, in his *Ichthyology of South Carolina*:

The great delay in the publication of the *Ichthyology of South Carolina* has been caused by the destruction of all the plates, stones, and original drawings, in the burning of the "Artists' Buildings," in Philadelphia, several years since.

This made it necessary to have new drawings made of all the different fishes, which has been done at great expense;—so great, indeed, that the work could not have been carried on without the aid of the State, which has been freely given. The new drawings are from nature, and have been made by the best artists,—as A. J. Ibbotson and A. Sonrel. The colour of the fish has been, in almost every instance, taken from living specimens, by J. Burkhardt, an artist of great merit.

The delay in the publication of the work has, however, enabled me to give more accurate and highly finished plates, and to correct some errors in the letter-press.

As but few numbers of the work were distributed previous to the destruction of the original plates, &c., and the present edition is so much improved, I have decided to recall the former numbers, and to replace them by those of the new edition, without expense to the present holders.



On 25 January 1825, Captain Frederick William Beechey (later Rear Admiral) of the British Royal Navy set sail for the Pacific in

THE  
**ZOOLOGY**  
OF  
**CAPTAIN BEECHEY'S VOYAGE;**

COMPILED FROM THE

COLLECTIONS AND NOTES MADE BY CAPTAIN BEECHEY.

THE OFFICERS AND NATURALIST OF THE EXPEDITION,

DURING A VOYAGE TO THE PACIFIC AND BEHRING'S STRAITS PERFORMED IN  
HIS MAJESTY'S SHIP BLOSSOM,

UNDER THE COMMAND OF  
CAPTAIN F. W. BEECHEY, R. N., F.R.S., &c. &c.  
IN THE YEARS 1825, 26, 27, AND 28.

BY

J. RICHARDSON, M.D., F.R.S., &c.; N. A. VIGORS, Esq., A.M., F.R.S., &c.; G. T. LAY, Esq.;  
E. T. BENNETT, Esq., F.L.S., &c.; RICHARD OWEN, Esq.;  
JOHN E. GRAY, Esq., F.R.S., &c.; THE REV. W. BUCKLAND, D.D., F.R.S., F.L.S., F.G.S., &c.  
AND G. B. SOWERBY, Esq.

ILLUSTRATED WITH UPWARDS OF  
FIFTY FINELY COLOURED PLATES BY SOWERBY.

PUBLISHED UNDER THE AUTHORITY OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

LONDON:  
HENRY G. BOHN, 4, YORK STREET, COVENT GARDEN.

MDCCLXXXIX.

Title page from William Frederick Beechey's *The Zoology of Captain Beechey's Voyage* (London: Henry G. Bohn, 1839).

command of the HMS *Blossom* in order to explore the natural history of that area and to rendezvous in the Bering Strait with a polar expedition coming from the east. Previous to this assignment he had participated in the 1818 Franklin expedition to the Arctic.

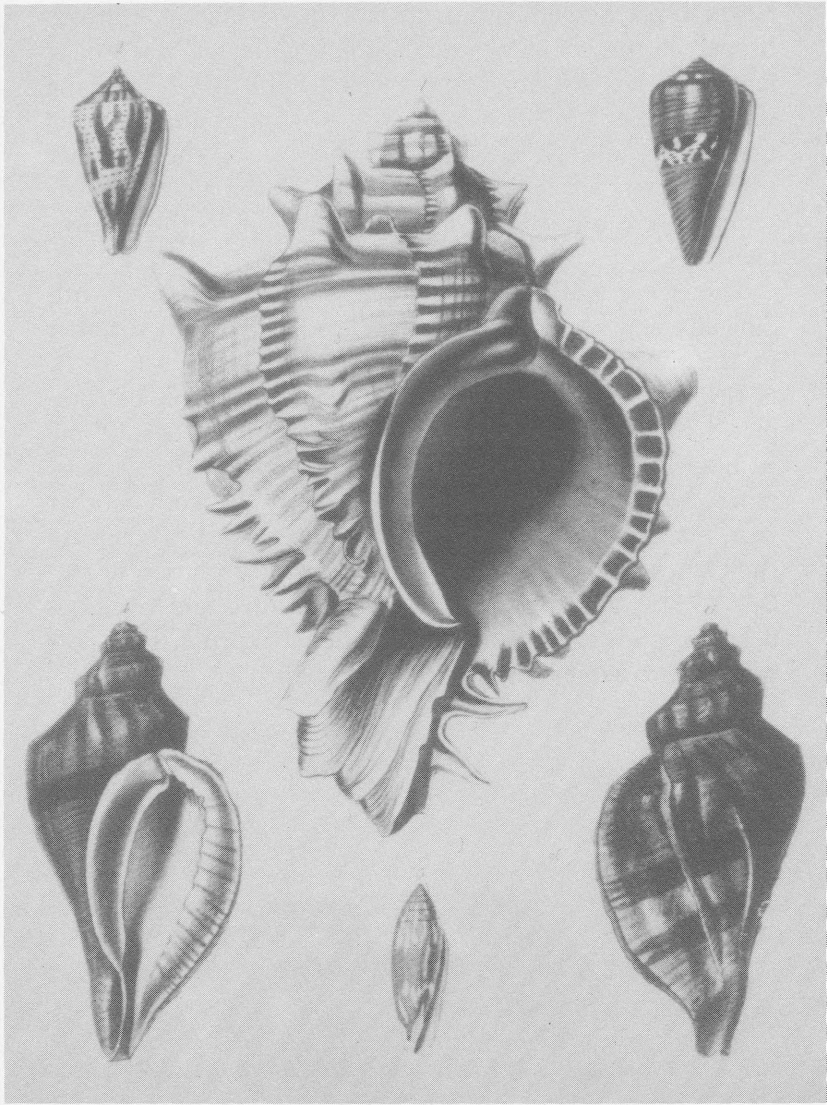
From the specimens collected during the exploration came the material described in *The Zoology of Captain Beechey's Voyage . . . During a Voyage to the Pacific and Behring's Straits Performed in His Majesty's Ship Blossom, in the Years 1825, 26, 27, and 28* (London, 1839), by some of the most eminent scientists and foremost illustrators of the day. These included the anatomist Richard Owen; the palaeontologist Rev. William Buckland; the botanist William Hooker; and, most notably, the zoologist John Edward Gray, Esq., F.R.S., &c. The illustrators included George Brettingham Sowerby of the well-known natural-history publishing family, and Edward Lear.

The story of the voyage itself was published by Captain Beechey in a two-volume narrative. In his preface to the *Zoology*, a separate publication, he thanked the contributors for their financial, scientific, and artistic support in seeing the publication realized:

It must be well known to those who are conversant with matters of science that a work of this nature could not have been presented to the public without a considerable loss to the publisher, had there not been among the community gentlemen, who were eminently qualified for the task, sufficiently liberal to bestow gratuitously their time and their talents upon the descriptions; and had not the Government with its accustomed liberality and desire for the promotion of science, contributed towards the publication by granting a sum of money to defray the cost of the plates.

Captain Beechey then thanked individual contributors by name and concluded his encomia as follows:

I wish I could with sincerity have included with the above-mentioned names that of MR. J. E. GRAY, who undertook to describe the shells, but the publication has suffered so much by delay in consequence of his having been connected with it, that it is a matter of the greatest regret to me that I ever acceded to his offer to engage in it. This delay has from various causes been extended over a period of eight years, and I cannot with justice or propriety conceal from the government, the collectors, and especially from the contributors to the work, whose MSS. have been so long printed, that it



*Murex* (genus). Illustrated by G. B. Sowerby (described by John Edward Gray) for William Frederick Beechey's *The Zoology of Captain Beechey's Voyage* (London: Henry G. Bohn, 1839), plate 33.

has been occasioned entirely by MR. GRAY's failing to furnish his part in spite of every intercession from myself and others: promising his MS. from time to time, and thereby keeping the department in his own hands, yet always disappointing the printer, until at length, from other causes, the publisher (Mr. Richter) fell into difficulties, and all the plates and letterpress were sold by the assignees and lost to the government.

The plates and sheets thus dispersed were however with difficulty and at considerable expence [sic] brought together by the spirited conduct of the present publisher, MR. H. G. BOHN, who anxious that the work should if possible be completed, again applied to MR. GRAY, but much against my wishes. That gentleman however repeated his offer of assistance, but as before it served only to delay the work another year. At length MR. G. B. SOWERBY was engaged to complete the Conchology, and to revise the unprinted portion of MR. GRAY'S MS., and thus after an unprecedented and vexatious delay, and with a considerable additional expense, I am now only able to submit the work to the public.

F. W. BEECHEY.

JULY, 1839

