

A John Dory (*Zeus faber*) made by an artist in the 1570s commissioned by Clusius.

# Fishes in Art and Science

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It is a remarkable art, historical, scientific and sociological fact that, from at least the 11th century, Chinese artists were depicting fishes not only as swimming underwater, but viewed as if seen underwater, whereas European artists failed to achieve such a vision until the second half of the 19th century, up to then invariably presenting fishes as seen from above the surface. This difference in outlook also reflects an underlying dialectic inherent in all natural history representation: documentation versus artistry, effective information as opposed to affective "coloring", for we are aware that even in quite unskilled works, the artist has betrayed a feeling toward the subject, if only by selecting a particular viewpoint or making certain facts about the subject seem more significant than others. This is where art begins, and it is in the greatest natural history pictures, for example those of Ferdinand Bauer (1760-1826), artist on the *Investigator* voyage around Australia from 1801 to 1805, that

one sees the art and the documentation attain a final unity, the dialectic resolved.

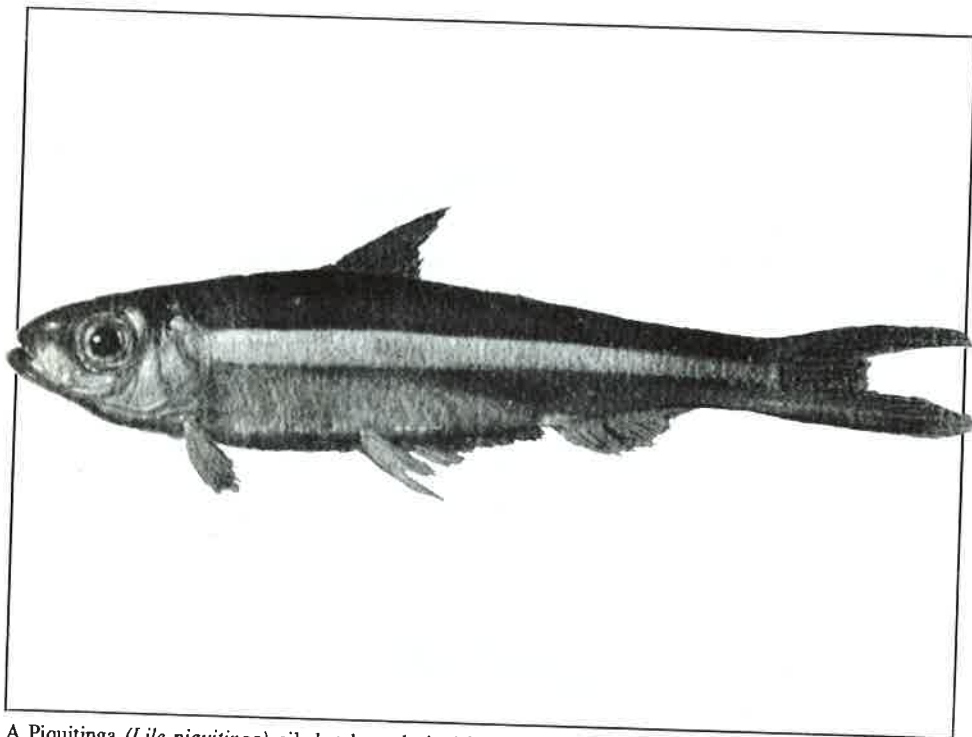
In all earlier societies this mixture of the documentary and the artistic in depicting natural history subjects reinforced the inculcation of ethical, moral and purely practical attitudes to the exploitation and rational management of natural resources. Primitive rock paintings of animals are an obvious example, crude in their execution but no less subtle in their intention than those refined Chinese visions of fishes underwater.

This, however, is conservatism. The Renaissance brought to Europe a different imperative -- the discovery and exploitation of new and exotic resources, hounded for countless generations by indigenous peoples, but now there for the taking. A primary need was to document the new, and if this carried a social

message, it was partly wonder, but chiefly a prescription to exploit. At the same time, taxonomy (the theory and practice of identifying, naming and classifying organisms) became popular and this, too, emphasized the documentary role of natural history illustration. The depiction of fishes is typical of this episode in European vision.

The books of Rondelet, Salviani and Belon, founders of modern ichthyology, together with the compilations of Gessner and Aldrovandi (all five born within fifteen years of each other, 1507-22), were illustrated by woodcuts or engravings that showed fishes by simple and often highly stylized lines. If this was a fault, it lay only partly with engraving technique, for Dürer and others had already shown that fluency was possible. More likely it reflected inherited concepts of what a zoological or botanical book illustration should be.

Illustrations were essential because the visual dictionary by far exceeded the



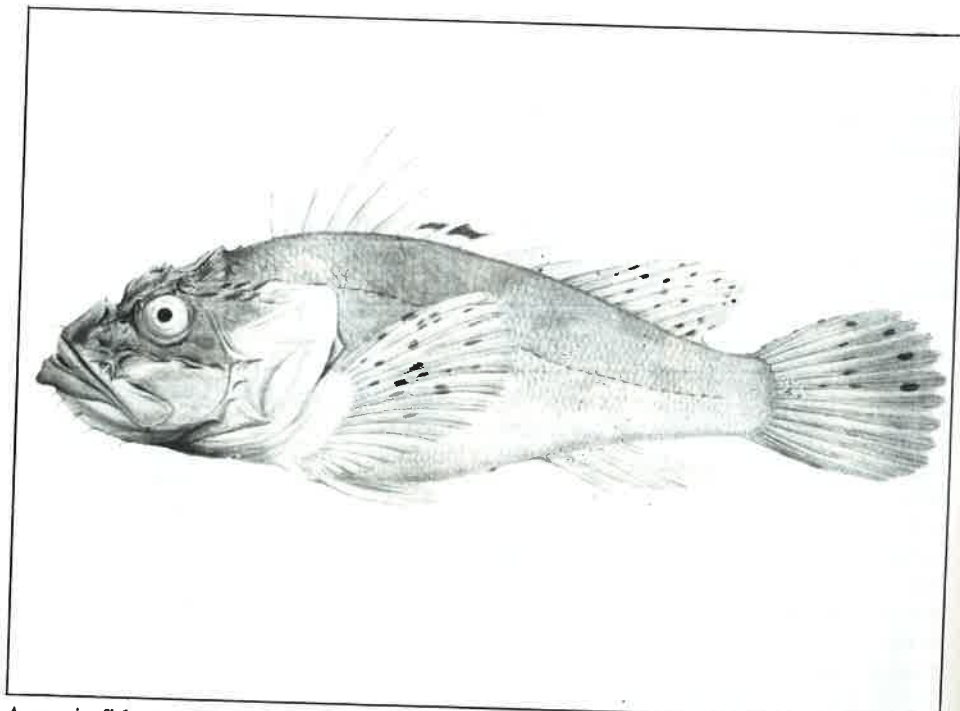
A Piquitinga (*Lile piquitinga*) oil sketch made in 1641 by Albert Eckhout, an artist who was working for Johan Maurits in Brazil.

purely verbal one. This is even more true of the drawings and paintings made from life. It is a mistake to think that 16th century artists either saw their fishes as shown in the engravings, or else could not draw them. In the 1570s the botanist Charles L'Ecluse (Clusius) commissioned artists and in the sixteen volumes now in the Jagiellon Library in Cracow are some watercolors of fishes that would not disgrace a modern book. Similarly, when Johan Maurits was Governor-General of Dutch-occupied Brazil in 1637-44, he employed first-class artists whose oil sketches and watercolors certainly rival those produced by artists on Captain Cook's voyages a century and more later.

Such pictures, far more than the Latin texts, enable us not only to identify what was encountered, but to appreciate the extent which taxonomic curiosity had reached. From the simple drawings made by Fernandez Oviedo y Valdes, Governor of Santo Domingo in the 1520s, to the often quite polished watercolors of fishes made in spare time by officers of the East India Company, we have a rich visual record without which the verbal one would be only partly explicable.

Pictures of fishes also played a vital role during the period when the preservation of specimens or their shipment back home presented problems. The birth of modern scientific nomenclature with the

works of Carl Linnaeus in the mid-18th century gradually brought the necessity for each species to have a physical voucher, a type specimen serving as the ultimate evidence for what that species name should be applied to. However, a picture could fulfill the same purpose (i.e., an iconotype), or at least back up



A scorpionfish watercolor done in 1768 by Sydney Parkinson on Cook's first voyage.

specimens with live colors or other details. In this way, even crude expedition sketches carried a permanent value and ensured the preservation by continued use of collections that might otherwise have been discarded. Visual documentation had reached its apogee.

As Daniel Pauly so rightly pointed out in an earlier issue of *Naga* (October 1987), the 'objective detachment' of science, although perhaps itself a myth in final analysis, nonetheless now requires powerful new mythologies if it is to fuel rational social policies (conservation of aquatic resources in his article). Hitherto, the visual documentation of fishes has well served the 'detached' mission of ichthyology and must continue to do so, while men like Ferdinand Bauer and the artists of Johan Maurits and Captain Cook have brought this aspect to its height by resolving the dialectic between art and science and imparting to their pictures a great aesthetic achievement.

However, it would seem that no longer can mere drawings and paintings serve the broader and now pressing needs of ichthyology. Although they will continue to be produced, contributing to both art and science, from now on more powerful mythologies must play a part, as for example the world of Jacques Cousteau -- the swimming of fishes underwater. Eight centuries after the Chinese perhaps, but still a vital message, for in Shanghai the water was so black with pollution that I doubted fishes swam at all. ●