Dr Pieter Bleeker, undated photograph from the Holthuis collection, Naturalis.
Introduction

It is now 150 years since Dr Pieter Bleeker published Volume I of his "Ichthyologiae Archipelagi Indici Prodromus", literally translated: “A precursor of the Fishes of the Indian Archipelago”. In the preface of this work Bleeker wrote that he intended to publish an illustrated review of all ca 2000 species of the Indian. Volumes 1-IX of this work would be published from 1862-1878 as the “Atlas Ichthyologique des Indes Orientales Néerlandaises”. Unfortunately Bleeker’s opus magnum would remain unfinished because of his death in January 1878.

In 1858 coloured drawings of almost all species were ready and a grant for the printing had been awarded by the Dutch Colonial Government. However, Bleeker decided to postpone the printing of the “Atlas” till he had returned to Europe as local printers in Batavia, his home town, could not meet his high demands.

As a precursor to his Atlas, Bleeker decided to publish a series of reviews of the fish fauna of the Indian archipelago. Each volume would be a compilation of all his earlier papers on one particular taxon and was intended as a kind of primer and exercise for what Bleeker envisaged to be his final work.

Vol. I of this series was a revision of the Order Siluri, the catfishes. After a critical description of the systematic work on this order by predecessors and contemporary ichthyologists, Bleeker divided the Siluri in four Families, viz. the Siluroidei, Aspredinoidei, Loricaroidae and Heterobranchoidei. In the Indian archipelago he only obtained representatives of the first and the last family. These were subdivided in Subfamilies, Phalanges, and Cohortes. Detailed descriptions were presented for 99 species. Many species earlier described by Bleeker were placed in synonymy.

Latin and Dutch

Like many papers that formed the basis of his revisions, the Prodromus volume was bilingual. Diagnostic keys and descriptions of genera and species were in Latin, whereas the history of Bleeker’s own systematic research, the taxonomic reviews of the families, information on the specimens used for the descriptions, explanations of the scientific names, distinguishing characters, and data on species distribution, stomach contents, fishery and consumption were in Dutch. As a consequence, more than half of the text was unavailable to most ichthyologists.

Probably Bleeker explicitly wanted to reach a Dutch audience. He owned most of his specimens to donations of his countrymen, who were distributed all over the Indian archipelago. By writing in Dutch (and naming species after their collectors) he could make them aware of his gratitude and stimulate them to send him more specimens.

In the Atlas Ichthyologique the species descriptions were still in Latin, but for additional remarks French was used instead of Dutch. However, these French parts in the Atlas are much more condensed than the Dutch parts in the Prodromus. The Dutch parts of the Prodromus volumes are unique as they contain information on type specimens mentioned neither in the original species descriptions nor in the Atlas. These data are indispensable for designating specimens from the Bleeker collection as types.
Vol. I of the *Prodromus* was published as Vol. IV of the *Acta Societas Scientiarum Indo-Neerlandicae* (Bleeker, 1858a) and separately as a book (Bleeker, 1858b). Although the two versions have same contents, the lay-out differs slightly. In the book version p. ii-xii containing the index and the errata, are placed before he main text, in the journal version at the end of the main text.

In the two versions of *Prodromus* Vol. II, dealing with the Order *Cyprini*, (Bleeker, 1860a,b) the lay-out was similar to the book version of Vol. I. After Bleeker’s return to the Netherlands in 1861, the *Prodromus* series stopped. Nevertheless, Bleeker continued to publish many smaller revisions of families, subfamilies, and genera as precursors for the Atlas till the end of his life.

**Notes on the translation**

Our translation of the *Siluri* is made from the book version. In general the lay-out of the book is followed. Latin parts that in the original were set in a smaller font, have been treated the same when translated. The lay-out of the tables in a few places is slightly adjusted to make them more lucid. Page numbers of the original publication are incorporated in the text in a grey square.

In Bleeker’s time, it was not yet an official standard to write Latin names in italics. Bleeker uses italics rather haphazardly. In the translation we have followed Bleeker. Similarly no corrections are applied to Bleeker’s inconsistencies in abbreviations of names of journals, the application of diereses, etc. Only mistakes in spelling of scientific names are corrected. However, a number of older anatomical names, which are no longer in use, are replaced by up to date synonyms. Thus, “*cirri supramaxillaris*” is translated by maxillary barbels, “*inframaxillare*” by lower jaw, “*intramaxillare*” by premaxilla and “*interparietal*” by supraoccipital.

**Notes on Bleeker’s measurements**

Apparently Bleeker assumed that all readers were familiar with his abbreviations and measuring techniques as defined in his earlier publications. For example, in his species descriptions Bleeker (1858a,b) behind the number of caudal fin rays (e.g. C.1/13/1) used the abbreviation “*et lat. brev.*” without explanation. Earlier (e.g. in Bleeker, 1846) he used “*c. lat brev.*”, “*cum later. brev.*” and “*c lat.*” or “*c later.*” Only once (Bleeker, 1846: 150 = 1847: 22), the full text is given as “*cum lateralibus breviaribus.*” Translated literally this means “with the lateral ones shorter”. Obviously, “lateral” refers to the fin in the sagital plane and therefore we have translated this as “and shorter ones alongside”.

About the measurements Bleeker (1846: 143) stated [translated] “With regard to the clarification of length and width measurements of the head, which occur in the diagnosis of most of the species, it must be pointed out that the length is taken from the tip of the upper jaw to the most posterior extension of the gill cover. Only in species of Clarias that length is taken from the upper jaw to the posterior most part of the interparietal [= supraoccipital] bone. The head width in all species is taken over the gill covers. Wherever the length of the body is discussed it is the total length of the body, including the head and the caudal fin, unless the reverse is said.”
In the present paper Bleeker (1858a,b: 12; see p. 19, 20) gives definitions of several taxonomic characters and two other measurements.

In his earliest paper in which the lengths of described specimens are mentioned (Bleeker, 1847) and in his first twelve publications in the Verhandelingen van het Bataafs Genootschap (Vols XXII & XXIII, 1847-1849), lengths of specimens are given in mm. In subsequent papers he always used the notation “”, which gives the impression that he does not use the metric system. However, in his first paper in the “Natuurkundig Tijdschrift voor Nederlandsch Indie” Bleeker (1851: 8) stated [translated]: “Of all species I have added in the diagnosis the length of the specimens used for the description expressed in millimeter measure.” This measure is indicated as: “”. A comparison of the size of Bleeker specimens and the measurements given in the descriptions, makes clear that Bleeker always gives the total length in millimeters. Only rarely another length measurement indicated as “absque pinna caudalis” [without caudal fin] is used.

The figures

For identification as well as for determination of the relationships of the species, Bleeker attached much value to head and body shape, and the shape of bony elements, fins and fin spines, teeth and tooth patches. He often must have had problems when trying to express these shapes in words, especially in Latin. Bleeker realized that figures were indispensable for illuminating both morphology and colouration. He believed it was essential to have figures made not only of the **habitus** of the species but also a dorsal view of the head to show the shape of the head bones with fontanels and granulation as well as of the jaw- and palatal dentition.

Bleeker was very critical of the achievements of his artists (all drawings of catfishes were made by Mr L. Speigler) and he even wrote that because of the many corrections he had to have made, the figures should be considered more his own work that that of his artist (Bleeker, 1878; van Oijen, 2005).

As in Bleeker’s time facilities for publishing of large coloured plates in the Dutch East Indies were limited, the figures of the species described in *Prodromus* Vol. I were published 4 years later. In our translation these figures are combined with the text. The figures were scanned from the plates of the Naturalis’ copy of Volume II of the Atlas Ichthyologique. In the Atlas, figures are life size unless specimens were larger than page size, in which case they were reduced by the lithographer. The page size of the Zoologische Mededelingen forced us to reduce the size of nearly all **habitus** figures to page width. In the few cases when figures were enlarged, the original size of the figure is indicated. The dorsal view of the head, and the figures of the dentition are included at Atlas size (= life size). In a few cases the size had to be reduced to 75% Atlas size.

Continuous research

The publication of Vol. I of the Prodromus, was a milestone in Bleeker’s research on catfishes, but his research on the catfishes of his collection and the description of new species continued. As a result of new research some descriptions had to be adapted. In a few cases figures of the dentition published in the Atlas (Bleeker, 1862) diverge from the descriptions in Bleeker, 1858. Bleeker never refers to any detail in the figures,
neither in the Prodrorum volume nor in the Atlas. Therefore it is not clear whether the uncolored drawings of the head and the dentition were made before the publication of his Prodrorum and adapted for the Atlas, or especially for the Atlas. Only in the case of Silurichthys hasseltii Blkr we can be certain that the figures of the head and dentition were made in the Netherlands, as the only specimen of this species was preserved in the Leyden museum.

In the Atlas some species still regarded as valid by Bleeker (1858a, b) were placed in synonymy, while quite a few others species were placed in different genera. Remarks on changed views of Bleeker are placed between square brackets.

**Recommendation**

As Bleeker in this work gives an overview of all his papers on catfishes, from 1846 through 1858, it gives an insight in his development as an ichthyologist. His changing views on this group of fishes are exemplary of his treatment of other groups. Therefore, many parts of this work are of interest to other ichthyologists dealing with Bleeker species.

I hope this translation may contribute to the appreciation of Dr Pieter Bleeker as an ichthyologist and systematist and that it may stimulate further research on the fishes of the Indonesian Archipelago.

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MvO
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**References**
