*Short notes and reviews*

# Contributions to Zoology, the Journal - diversity in research topics and changes over the last 27 years

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**Abstract**

We provide a brief overview of the history of the journal *Contributions to Zoology* and analyse the papers published in the last 27 years by topic. Founded in 1848 as *'Bijdragen tot de Dierkunde'*, 160 years and 76 volumes later it is one of the oldest zoological journals that is still regularly printed. Over the last decades most papers dealt with invertebrates (60%), followed by vertebrates (23%), insects (10%) and non-taxonomic papers. *Contributions to Zoology* has seen a change from a largely alpha taxonomic journal to one that is truly general in scope. Systematic Biology and Comparative Morphology of both extant and extinct taxa nowadays make up about half of the papers published. Ethology as a research subject has been gradually phased out, and judged by the number of papers published, Conservation Biology has seen its coming of age of as a mainstream biological science. With contributors from 36 countries, of which 40% from outside Europe, *Contributions to Zoology* is a truly international journal, for research and researchers from various parts of the world.

The journal *Contributions to Zoology* started in 1848 under the name *Bijdragen tot de Dierkunde* and adopted its current English name to be the leading title in 1995. Nearly 160 years and 76 volumes later it is one of the oldest zoological journals that is still regularly printed. In the past some volumes spanned multiple years and there have been periods, such as during the great wars, when publication of the journal was halted. Founded by the Royal Zoological Society 'Artis Natura Magistra', and later integrated in the University of Amsterdam in 1939, the journal is now published by the National Natural History Museum Naturalis in Leiden and the Zoological Museum of the University of Amsterdam in a joint venture. In this modest bibliographic study we analyse what has been published in *Contributions to Zoology* in the last 27 years and we assess which major taxonomic groups were studied, who conducted the research, and what the research topics have been.

For analysis we looked for some natural divides in the time period and grouped the 27 years into 4 periods bounded by changing editor-ship, i.e. 1981-1990 (J.H. Stock), 1991-1995 (S. van der Spoel), 1996-2002 (F.R. Schram), and 2003-2007 (R.W.M. van Soest and R. Vonk). All editors were associated with the Zoological Museum Amsterdam, and their research focused mainly on (fossil or extant) aquatic invertebrates.

Table 1 shows that although the journal has attracted papers from a wide variety of taxa, perhaps in line with the research interests of the editors, there is a

*Table 1.* Breakdown of papers published from 1981-2007 according to taxon studied. Presented are, respectively: total number of papers, (yearly average), percentage.

| | 2004-2007 | 1996-2003 | 1991-1995 | 1981-1990 |
|---|---|---|---|---|
| Vertebrates | 18 (4.5) 32.1 | 20 (2.9) 23.4 | 10 (2.0) 14.3 | 42 (4.2) 22.2 |
| Invertebrates | 31 (7.8) 53.3 | 62 (8.9) 62.6 | 53 (10.6) 64.6 | 111 (11.1) 61.4 |
| Insects | 5 (1.3) 9.2 | 4 (0.6) 3.7 | 14 (2.8) 17.3 | 36 (3.6) 11.6 |
| Other (no taxa / across taxa) | 3 (0.75) 5.4 | 11 (1.6) 10.2 | 3 (0.6) 3.8 | 11 (1.1) 4.9 |

*Table 2.* Breakdown of papers according to subject matter. Presented are, respectively: total number of papers, (yearly average), percentage.

| | 2007-2004 | 2002-1996 | 1995-1991 | 1990-1981 |
|---|---|---|---|---|
| Alpha taxonomy | 3 (0.8) 4.2 | 11 (1.6) 12.3 | 43 (8.6) 51.8 | 87 (8.7) 43.6 |
| Systematics | 23 (5.8) 41.7 | 30 (4.3) 35.1 | 21 (4.2) 27.6 | 36 (3.6) 17.3 |
| Comparative morphology | 9 (2.3) 15.4 | 18 (2.6) 14.4 | 3 (0.6) 4.5 | 28 (2.8) 12.4 |
| Ecology | 5 (1.3) 7.9 | 11 (1.6) 8.9 | 5 (1.0) 5.7 | 24 (2.4) 13.5 |
| Ethology | 0 (0) 0 | 3 (0.4) 4.4 | 2 (0.4) 3.7 | 15 (1.5) 8.9 |
| Palaeontology | 3 (0.8) 5.4 | 8 (1.1) 8.2 | 0 (0) 0 | 2 (0.2) 0.6 |
| Conservation biology | 4 (1.0) 8.3 | 1 (0.1) 1.0 | 1 (0.2) 1.7 | 0 (0) 0 |
| Other | 10 (2.5) 17.1 | 15 (2.1) 15.7 | 5 (1.0) 5.1 | 8 (0.8) 3.6 |
| Total | 57 (14.3) | 97 (13.9) | 80 (16.0) | 200 (20.0) |

strong tendency for papers to be published on invertebrates. In the past at least six out of ten papers accepted for publication dealt with invertebrates, whereas in the last few years more and more papers on vertebrates get published. Despite the large number of insect species in the world, entomologists have rarely found their way to *Contributions to Zoology*, and probably seek out the specialised journals.

How much there still is to discover about animal diversity (Magurran, 2003) becomes apparent when taking into account the number of new species that have been described in this journal alone. In almost every issue one or more new species, and higher taxa, are described, and considering the papers by Karasawa & Schweitzer in 2006 (fossil crabs), or Poeser and colleagues in 2005 (guppies), this does not only refer to little-studied or cryptic taxa.

Significant contributions in the past related to the theory of phylogenetic methods were made by Mooers and Schluter (1998), Lee (2001), Jenner (2002), and Koenemann and Schram (2002), whereas the phylogenetic relationship in triclads, polychaetes, Anomura, amphipods and xanthoid crabs were reported upon among others by Sluys (1989), Rota *et al*. (2001), Tudge (1997), Vonk & Schram (2003) and Karasawa & Schweitzer (2006), respectively.

Ecology and ethology are minor subject areas in *Contributions to Zoology*, but papers by De Voogd *et al*. (2005), and De Iongh *et al*. (1997), highlight the importance of this research area. Palaeontology was an important subject area, especially during the tenure of F.R. Schram as Editor-in Chief. His research on fossils and decapod phylogeny (Schram and Dixon, 2003; Schram, 1986) demonstrated the feasibility of treating fossils as full and equal partners in the study of decapod phylogenetic relationships and that rigorous cladistic methods could be used to evaluate the phylogenetic positions of fossils. After the superannuation of Schram, *Contributions to Zoology* remained an important outlet for palaeontologist to publish their work, as demonstrated by van Weers' (2005) taxonomic revision of fossil porcupines.

Conservation biology as a subject found its way relatively early to the journal with diverse topics, such as changes in the amphipod fauna in The Netherlands (Pinkster *et al*. 1992), butterfly communities on Sardinia (Grill *et al*. 2004), changes in an intertidal community structure after a mass mortality event (Dadon, 2005), to the role zoos can play in the conservation of threatened taxa (Nijman, 2006; Gippoliti and Meijaard, 2007), and has increasingly gained importance. The paper by Nekaris and Jaffe (2007), in the preceding issue, illustrates the importance of taxonomy in conservation biology, as without proper knowledge on how many taxa there are, conservation efforts such as reintroduction programmes may turn out to be counter-productive.

Table 2 shows that over time *Contributions to Zoology* has changed from a largely alpha taxonomic journal to one that is, again, truly general in scope. Systematic biology (including topics such as biogeography, evolutionary biology, phylogenetics, and phylogeography) and comparative morphology nowadays make up about half of the papers published, and a strong trend is that more and more papers are accepted on other topics as well. We feel that the shift from publishing largely descriptive papers, such as those reporting on new species without added analysis on the phylogeny, zoogeography, or evolutionary significance, to publishing more analytical papers is one that is reflective of the way science in zoology has progressed. The breakdown of papers according to subject matter also highlights the phasing out of Ethology or Animal Behaviour as a subject area, and sees the coming of age of Conserva-

tion Biology as a mainstream biological science (cf. Meffe *et al*., 2006). The subject is now widely taught at universities, with its books and journals filling entire shelves in libraries, and with its controversial predictions fuelling the public debate.

*Contributions to Zoology* offers the possibility, at least occasionally, to publish lengthy review papers or lengthy original contributions. Papers regularly exceed 25 printed pages and R.A. Jenner's 161 page monumental paper on evaluating phylogenies of Metazoa (Jenner, 2004) is one that will most likely not be surpassed soon. The long-standing goal to be a truly international journal is upheld – in the last 25 years the journal has had contributors from 36 countries and almost 40% of the contributors reside in countries outside Europe.

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