SUPPLEMENTARY MATERIAL S1

Taxonomic distribution of cryptic diversity among metazoans: not so homogeneous after all

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1. Methods

(a) Detailed bibliographical search strategy

In brief, we conducted an exhaustive search of the ISI Web of Science™ for the period 1978-2015, to gather data from studies on cryptic species, with the initial search terms: “cryptic speci*” OR “cryptic linea*” OR “cryptic tax*” OR “sibling species” in either the title, abstract or keywords of papers. A total of 7,551 entries were retrieved. Since our focus is on metazoans, we refined the search to only retain studies on members of the kingdom Animalia.

More specifically, the initial search used the terms: **TOPIC:** ("cryptic speci*") *OR* **TOPIC:** ("cryptic linea*") *OR* **TOPIC:** ("cryptic tax*") *OR* **TOPIC:** ("sibling speci*"). To exclude papers on plants, fungi, algae and prokaryotes, and to focus on Metazoans, the original search was refined to include only research areas where publications on metazoans are found, as follows:

WEB OF SCIENCE CATEGORIES: (ZOOLOGY OR EVOLUTIONARY BIOLOGY OR ECOLOGY OR GENETICS HEREDITY OR ENTOMOLOGY OR

BIOCHEMISTRY MOLECULAR BIOLOGY OR MARINE FRESHWATER BIOLOGY OR PARASITOLOGY OR BIODIVERSITY CONSERVATION OR BIOLOGY OR OCEANOGRAPHY OR TROPICAL MEDICINE OR VETERINARY SCIENCES OR INFECTIOUS DISEASES OR ENVIRONMENTAL SCIENCES OR FISHERIES OR ORNITHOLOGY OR LIMNOLOGY) AND **DOCUMENT TYPES:** (ARTICLE OR REVIEW OR BOOK CHAPTER OR PROCEEDINGS PAPER) AND **RESEARCH AREAS:**
(ZOOLOGY OR EVOLUTIONARY BIOLOGY OR ENVIRONMENTAL SCIENCES ECOLOGY OR GENETICS HEREDITY OR ENTOMOLOGY OR BIOCHEMISTRY MOLECULAR BIOLOGY OR MARINE FRESHWATER BIOLOGY OR PARASITOLOGY OR BIODIVERSITY CONSERVATION OR LIFE SCIENCES BIOMEDICINE OTHER TOPICS OR OCEANOGRAPHY OR TROPICAL MEDICINE OR VETERINARY SCIENCES OR INFECTIOUS DISEASES OR FISHERIES)
Indexes=SCI-EXPANDED Timespan=1978-2015
This way, a total of 6,054 entries were retained and individually screened by checking their title, keywords and abstract.

(b) Further exclusion of studies

We excluded some other papers in the following cases: (i) when the abstract and/or the paper itself was not available from the library of the University of Otago, and could not be found in open repositories such as ResearchGate; (ii) when the article focused on animals kept under experimental conditions (grown in laboratory), such as *Drosophila melanogaster*, *Mus musculus* or *Daphnia* sp. (e.g., [1]); (iii) when the

article was a review paper mentioning cryptic species but not focused on a particular taxon or biogeographical region (e.g., [2]).

(c) Other considerations

First, when we report the number of cryptic species in the dataset as 1, this means that in the original study the authors argue that what they believed represented a single species, was in fact a complex of two cryptic species. Since one of them retains the species name, the net addition to known diversity is 1 cryptic species. Thus, the number of cryptic species recorded excludes the original named species. If a paper reports the discovery of seven cryptic species, we counted it as six cryptic species, unless the paper uncovered cryptic species among a genus and none were previously described. Second, when a study referred to molecular phylogenetic analyses of a particular taxon across a geographic area that included more than one biogeographical regions, each cryptic species was recorded from the region where it occurred, unless it showed a wider distributional range. In that case, its biogeographical region is listed as "more than one".

2. Results

Annual numbers of CSR and of other articles simply mentioning cryptic species were strongly correlated with each other over the years 1978 to 2006 ($r = 0.967$, $p < 0.0001$; Figure S1). Both measures also increased exponentially over time (second-order polynomial regression: CSR, $R^2 = 0.902$, $p < 0.0001$; all articles simply mentioning cryptic species, $R^2 = 0.942$, $p < 0.0001$). However, the rise in the number of articles simply mentioning cryptic species was much steeper than that of CSR, and

the gap between these numbers got larger over time, being more than two-fold in 2006 (Figure S2). This shows that counting any article simply mentioning cryptic species as if it were an actual cryptic species report leads to grossly inflated numbers.

References

1. Parsons PA, Stanley SM, Spence GE. 1979 Environmental ethanol at low concentrations: Longevity and development in the sibling species *Drosophila melanogaster* and *D. simulans*. *Aust. J. Zool.* **27,** 747-574.
2. Thorpe JP, Solé-Cava AM. 1994 The use of allozyme electrophoresis in invertebrate systematics. *Zool. Scr.* **23,** 3-18.

SUPPLEMENTARY FIGURES

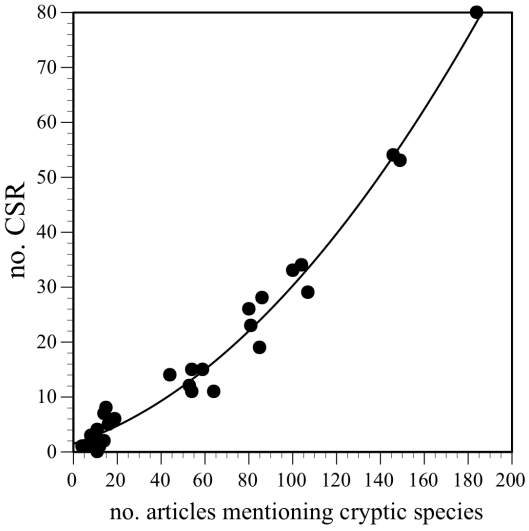

Figure S1. Relationships between annual numbers of CSR and of all articles simply mentioning cryptic species, over the years 1978 to 2006.

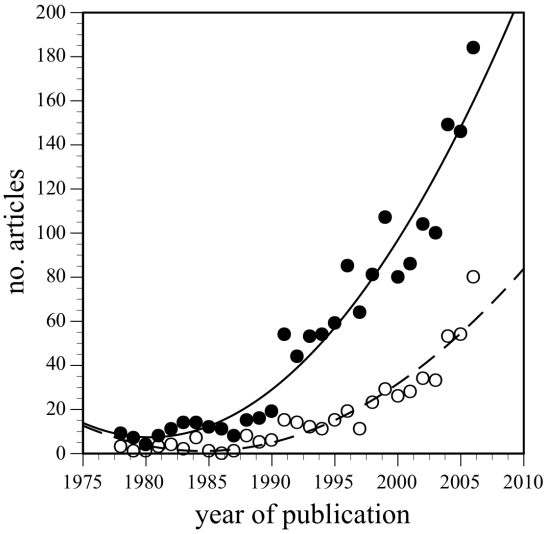

Figure S2. Annual numbers of CSR (open circles, broken line) and of all articles simply mentioning cryptic species (filled circles, solid line) as a function of year of publication, over the years 1978 to 2006.