

TAXONOMY CRISIS, BIODIVERSITY DISASTER – AND SABOTAGING REGULATIONS

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As one of the “*conservation challenges*” responsible for the “*impending disaster*” Sodhi & al. (2004) (like many others, and of course quite correctly) name the fact that “*research on Southeast Asian biodiversity over the past 20 years has ... been neglected*” and especially “*there remains a dearth of research on ... important taxa, such as vascular plants, invertebrates or fish*”, and draw the obviously correct conclusion that “*to remedy the paucity of biodiversity studies ... research efforts of regional and international expertise ... are urgently needed*”. Indeed, the biodiversity studies (not only in SE-Asia, though I agree that there the problems are especially serious), and in particular their very base: descriptive [“*alpha-*”] taxonomy, are in deep “*crisis*” (Erwin & Johnson, 2000), but unfortunately no promising, efficient measures to overcome that crisis have been attempted or even proposed and discussed: those sometimes suggested (as *e.g.* just by Erwin & Johnson, 2000) being much more likely to hamper than to promote systematical-biogeographical-ecological &c. research (*cf.* Holyński, 2001 for detailed argumentation)!

So, Erwin & Johnson (2000) evaluate the “*pace of new species descriptions*” as “*molluscan*” (and I do not think anybody – except, perhaps, molluscs... – will oppose them) and correctly identify the main causes of this state of affairs: **1.** “*reduced number of practicing descriptive taxonomists*”; **2.** very slow publication procedures [“*a typical paper ... can spend 9 months to a year on various desks before actual publication*”]; **3.** stress on published descriptions rather than on actual specimens. If so, one would expect from biologists, conservationists, and even the “pro-nature” oriented part of public opinion to be increasingly alerted towards the urgent need to **increase** the number of taxonomists, **accelerate** the publication of submitted papers, **facilitate** collecting, distributing, and studying specimens; alas! in fact the first two questions are rarely even mentioned, the last one almost

never, and the practical actions and regulations go with increasing speed in just the opposite direction!

According to realistic estimations, at the present “pace” more than **1200 years** would be needed “*to describe and publish a conservatively estimated remaining 8.6 million species of insects*” – and not only insects wait for being at least registered (described, classified, their distribution mapped)... The number of active taxonomists is evidently by far not sufficient to significantly reduce this distressful prognosis – the perspective of “alleviation” of the problem by the fact that after 1200 (or probably even 120 will prove enough...) years there will hardly remain much to describe (the pace of extermination of animals and plants is much higher than that of their cataloguing...) can delight only some technocrats – so, it would seem, every effort should be made to involve any specialist and to facilitate, simplify their work by any conceivable means. Unfortunately, despite solemn declarations as to the importance and urgency of biodiversity studies, just the opposite is done in practice – and, paradoxically enough, often just on the pretext of “nature protection”!!!

No country – even such as large and as wealthy as the USA – has “its own” specialists of all groups of organisms; on the other hand, serious taxonomic work cannot be carried out when restricted to one country. So, one would expect that governments and scientific/conservationist organizations will welcome and support any taxonomist from any part of the world who wishes to work on the fauna or flora of “their” area. Unfortunately, the reality is again the opposite: instead of welcome and support, such taxonomist encounters all kinds of obstacles and discouraging regulations (special very expensive “research visas”, “necessary” permits to perform studies, restrictions in collecting and/or taking or sending the material abroad, etc., etc., etc.)! What (except the bureaucrats’ greed and their craze to regulate everything) is the justification for special visas and research-permits is entirely beyond my apprehension; the restraints on collecting are usually motivated with conservationist arguments which, however, certainly make sense in case of condors or rhinoceroses, but as applied to the overwhelming majority of invertebrates (except perhaps some exceptionally attractive creatures like birdwing-butterflies or stag-beetles: very large, colourful or bizarre, and thence looked for **by non-scientists**) – and also most fishes, amphibians, or even small reptiles, birds and mammals – it is evident absurd (or, rather, pretext: “*alibi*” for **not** implementing the **really** needed [habitat-]protecting measures – cf. Hołyński,

2003 for further argumentation): **a)** it is not collecting (and surely not **scientific** collecting!) that could threaten them; **b)** the restrictions themselves are not consistent with such interpretation: *e.g.* collecting is often prohibited **only to scientists**, while *e.g.* “dealers” [who, killing hundreds to sell a few, are just most dangerous to the fauna, and at that the scientific value of their poorly and irreliably (if at all...) labelled specimens is close to zero] are not only allowed to collect, but – as *e.g.* in PNG, at least when I was there in 1989 – are even authorized to give “export”-permits; **c)** from the conservationist viewpoint impediments against collecting are definitely **harmful**: for most groups of organisms good, rich collections are the prerequisite for effective study, and it is a commonplace truth that what is not or poorly known cannot be efficiently protected! *“These are all practical considerations that make the law seem stupid and some otherwise law-abiding entomologists have found the ways to evade it. However, it is on questions of principle that scientists have most strongly opposed this legislation – Marks, 1978”*.

One can (and many do) say, that these restrictions do not pose problems, because “public” institutions can “always” receive the necessary permits to carry on the planned research – but this argumentation is partly untrue and partly irrelevant. Firstly, I myself (despite being rather poorly informed...) know of several cases when even Natural History Museums must have abandoned (or even refused the very idea of) interesting projects just because of the above-mentioned kind of difficulties. Secondly, collecting – especially of small, cryptic animals (*i.e.* the great majority...) – specifically for particular project can almost invariably (at least in taxonomy or biogeography) provide but supplementary material to that gathered by “general collecting”: virtually all hitherto named species have been described from the “accidentally” collected specimens; virtually all our present biogeographical knowledge has been based on such material; virtually all large, famous, important collections that all of us (taxonomists) frequently resort to, have been so accumulated! Thirdly, expeditions organized by institutions (museums, universities etc.) are rather rare and for decades have become more and more infrequent – the bulk of recent material is the result of collection by “amateurs”, for whom these restrictions are **very often** prohibitive! By the way, the discrimination of “amateurs”, thinking only in terms of scientific **institutions**, is itself a very strange inconsistency which strongly reduces our chances to overcome the “crisis” in biodiversity studies! Most of them are devoted students of their “beloved”

groups, having no less expertise in at least alpha-taxonomic and faunistic work than “professionals”, and differing from these latter only in doing this work from their own resources instead of being paid for it. Taking into consideration the notorious deficiency of “professional” [= employed in botanical or zoological institutions] taxonomists, it is a disappointing paradox that both institutional scientists and conservationists treat “amateurs” as rivals or enemies to be discouraged, handicapped, and kept away as far as possible, rather than as welcome valuable allies worthy of support and cooperation!

Some of the above-mentioned attitudes – and several others – issue from what could be described as “ownership-syndrome”. The principle that a scientific object is not anybody's property, but belongs to the Science in general, is very frequently quoted but, strangely enough, taken seriously only by “amateurs” – institutional, organizational, governmental “professionals” almost invariably pay at most “lip-service” to it, in practice thinking, arguing and acting consistently in terms of “ownership”: this material is the property of this museum, so our primary concern is to keep it here rather than to make it available to scientists for study; the plants and animals living here are the property (“national treasure”) of this country, so we can do with them what we please, and in particular allow only “our” scientists to study them without restrictions; these type-specimens have been collected in (some even say “stolen from”) our country, so they are our property and should be “restored” to our national museum; etc., etc., etc. Such – unfortunately very common – attitude makes no much sense, but “in return” puts yet another serious obstacle hampering studies on biodiversity, especially in tropical areas. What, for example, is the sense of sending “back” a type-specimen to the country where it had been collected? The function of types is to help solving some difficult taxonomic-nomenclatural problems, that can be carried out only by specialists, who would compare it to other relevant specimens (often collected in widely distant regions) and evaluate the results according to relevant literature (usually written by specialists from still other countries). So, for a type-specimen to be of any use, it should be available to **(a)** a specialist of the particular group having **(b)** an extensive [not only, or even predominantly, local!] comparative material at hand and **(c)** easy immediate access to a rich library. The overwhelming majority of Latin-American, African, and South-Asian countries have practically no taxonomists [e.g. in my – just “in press” – monograph of the genus *Chrysochroa* Dej. **(Coleoptera:**

Buprestidae – ca. 130 taxa from between India, Japan, and Moluccas) I quote more than 400 publications (even if not all are concerned directly with buprestid taxonomy) written by ca. 200 authors, **none** of them from India, Indochina or Malay Archipelago where almost all *Chrysochroa*-s live: two papers were by Chinese writers, several by Japanese writers, all the remaining by specialists from the countries or even continents not inhabited by representatives of the group in question!] Similarly, most countries outside of Europe or North-America have neither sufficiently extensive (esp. non-local) collections nor sufficiently rich libraries, so what could be the sense of keeping the type-material where there is nobody to study it, nothing to compare it to, and no literature on which to base the interpretation? – in most cases, if somebody (even a native scientist!) wishes to make proper use of the type, he/she must anyway bring it to USA, Europe, Japan or other such country... Instead, all possible effort should be made to establish in each country at least one representative (again: not only local!) reference-collection and to educate “own” taxonomists – who would then fill the shortage of biodiversity-students (not necessarily only in their fatherland) and, by the way, designate type-specimens for the described taxa (to be eventually kept in – simultaneously adequately developed – national collections...).

To sum up, the crisis in biodiversity studies will quickly **deepen** unless the decision-makers, money-distributors, regulation-creators and -enforcers, collection-managers understand (and act accordingly!) that there is no way to improve the situation without a great amount of taxonomic (and just that spurned “nineteenth-century philatelistics” – the descriptive “alpha”-taxonomy – rather than the current “*en vogue*” sophisticated molecular analyses which, however valuable from **other** points of view, are utterly inappropriate for the basic “survey” of flora and fauna [*cf. e.g.* Scotland & al., 2003]) and faunistic studies based on as extensive, reliably labelled (so not *e.g.* those provided by “dealers”) collections as possible. This, in turn, demands involvement of, and every support and encouragement to, **anybody** (no matter whether from “this” country or not, whether “private collector” or well-paid director of major “public” museum, whether the collected material will be deposited here or there [under the only condition that it **will be made freely available to any interested student**]) willing to perform the collecting and/or taxonomic-faunistic work! But the decision-makers, money-distributors, etc. will not understand or, the less so, implement these requirements

if **we, biologists** (taxonomists, biogeographers, conservationists), will not “cry, scream and roar” for this at any occasion, depriving them of the convenient “*alibi*” that “*scientists unreservedly accept the current policy*”!

So, there is urgent need to change the present situation, when here and there, from time to time, somebody (usually not those of influential positions, whose opinion would have the most chance to be effective...) parenthetically mentions the “crisis in biodiversity studies” or related problems, but does it silently, timidly, in isolation: there is no real discussion or cooperation (to say nothing of pressure on “rulers”), nothing like “lobby for reasonable policy”, and so it is no surprise that our postulates remain a “voice crying in the wilderness”. Uttering it in chorus would make this voice much louder!

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