EDITORIAL COMMENT ON BUTTERFLIES PROPOSED TO BE INCLUDED IN THE SCHEDULES OF THE INDIAN WILDLIFE (PROTECTION) AMENDMENT BILL, 2021

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Glyphosate [N-(phosphonomethyl)glycine] was discovered in 1950. In 1970, Monsanto, a multinational chemical giant, created an herbicide based on glyphosate, in its laboratory. In 1974, it was introduced in the market as Roundup (Benbrook, 2016). In 1976, a spate of indignant letters to the editor of *The Times* regarding butterfly collecting resulted in what Matthew Oates (2015) described as "a watershed year in our attitudes towards butterflies. Thereafter, collectors converted to photography, switched to collecting abroad, went undercover and became paranoid, or simply gave up- most of the collectors I encountered in 1976 were never heard of again." By the early 1980s, legislation was introduced in European countries banning insect collection. In 1986, butterflies were included in the Schedules of the Wildlife (Protection) Act, 1972. It is to be noted that no studies were carried out in the matter, but the banning of butterfly collection appears to have been based as a reaction to indignation amongst the public expressed as letters to the editors of newspapers.

Between 1989 and 2016, there was a more than 82% drop in summer-flying insect biomass inside protected areas in Germany (Hallman *et al*., 2017). This research was conducted by a group of private individuals. There were no equivalent studies anywhere else in the world monitoring insect populations.

The Zoological Survey of India was tasked with compiling a list of threatened butterflies that required "protection". Since there were no known threatened butterflies, they conducted a paper exercise wherein every species, subspecies or form that was assigned a status of 'Very Rare' by W.H. Evans in his 1932 book, The Identification of Indian Butterflies, was placed on Schedule 1 and every taxon with the status of 'Rare' was placed on Schedule 2. This included some crop pests like the Pea Blue (*Lampides boeticus* (Linnaeus, 1767)) and Gram Blue (*Euchrysops cnejus* (Fabricius, 1798)), which were included since they were 'Rare' in the Andaman and Nicobar Islands, although crop pests on the mainland. On page 28, Evans (1932) noted, "The designations Common, Rare, etc. have been assigned as the result of long experience, but a butterfly may be very common in one area and very rare in another, rare some years, common others or perhaps only to be found commonly for a very short period in a very restricted locality." The terms 'very rare' and 'rare' are a measure of our ignorance about the insect rather than an assessment of its status in nature.

Although insect collecting was banned in many countries in the wake of the indignant letters of 1976, there is not a single study worldwide examining the effectiveness or failure of the legislative bans. What is evident is that collecting stopped, pesticide and herbicide use increased and insect populations declined globally. There seems to have been a method to the madness, to silence potential whistle-blowers. Insect collectors would have been the first to notice a drop in insect populations globally.

Although the Wildlife (Protection) Amendment Bill, 2021 has reduced the

number of legally protected butterflies from 455 species to 120, the choice appears to have been based on equally bad advice. Five of the 63 butterfly species on Schedule 1 have not been recorded from India. These are: *Parnassius delphius* Eversmann, 1843, which occurs from Pakistan to Central Asia; *Parnassius hannyngtoni* (=*P. hunnyngtoni* Avinoff, 1916) which occurs in Tibet; *Pararge maera* Linnaeus, 1758, which occurs in Europe and the Middle East; *Lethe ocellata* (Poujade, 1885), known from China to Vietnam and *Clossiana erubescens haberhaueri* Hemming, 1933, which occurs in Kazakhstan and Kyrgyzstan. In addition, someone has taken the liberty of deleting the name of a form from a widespread and in no way threatened species, reducing *Chilasa clytia clytia* form *commixtus* to *Chilasa clytia clytia* Linnaeus, 1758 (the species is included under the genus *Papilio* Linnaeus, 1758 at present). There does not seem to be anything threatening or endangering *Papilio clytia* and it is entirely unclear why a rare genetic abberation, which would survive less than a month in the adult stage, should be afforded protection under any law.

The new version of Schedule 2 contains several additions: widespread and abundant species like the White Dragontail *Lamproptera curius* (Fabricius, 1787), Common Banded Peacock *Papilio crino* Fabricius, 1793, Paris Peacock *Papilio paris* Linnaeus, 1758, Golden Birdwing *Troides aeacus* (C.& R. Felder, 1860), Southern Birdwing *Troides minos* (Cramer, [1779]), Great Mormon *Papilio memnon* Linnaeus, 1758, Common Map *Cyrestis thyodamas* Boisduval, 1846, Orange Oakleaf *Kallima inachus* (Boisduval, 1846), Blue Mormon *Papilio polymnestor* Cramer, [1775] which, incidentally, is a crop pest in southern India, Crimson Rose "*Atrophaneura*" *hector* (= *Pachliopta hector* (Linnaeus, 1758)), the Danaid Eggfly (or Six-Continent Butterfly) *Hypolimnas misippus* (Linnaeus, 1764), Leopard Lacewing *Cethosia cyane* (Drury, [1773]); Queen of Spain Fritillary *Issoria lathonia* (Linnaeus, 1758), etc. etc. It is not possible to conceive of any justification for including these butterflies in the Schedule, unless it is with a view to harass vehicle drivers, since most of these butterflies are so common that they often are crushed under the tyres of moving vehicles. In fact, these common butterflies should form the basis of attracting children to know more about butterflies, since the Orange Oakleaf, Common Map, the Birdwings and Crimson Rose and other members of the family are colourful, have special stories attached to them and are easy to breed. If they are included in the schedules, even handling them will be illegal and trying to photograph them will come under the definition of 'hunting' (if the butterfly flies off when approached it can be interpreted as 'driving' which is included in the definition of hunting in the existing Act) and be illegal.

Nymphalis antiopa (Linnaeus, 1758) occurs in Bhutan and Tibet and has not been recorded from India; nor has *Lasippa ebusa ebusa* (C. & R. Felder, 1863), which occurs in Myanmar.

Out of 120 species included in the Schedules of the Wildlife (Protection) Amendment Bill 2021, seven have never been recorded from India!

Arhopala arata, which is included on Schedule 2, does not exist. If one believes the common name, Tytler's Rosy Oakblue, that refers to *Arhopala allata*; if one passes this off as a typographical error, then one is confronted with the Hybrid Sapphire and Watson's Hairstreak, both of which are paired with scientific names that refer to other butterfly species, i.e. *Heliophorus brahma* (Moore, [1858]) and *Chrysozephyrus disparatus pseudoletha* (Howarth, 1957). Which is the species meant to be 'protected'?

In conclusion, there is no justification for extending legal protection to any Indian butterfly. Nor is there any evidence to suggest

that 35 years of being legally protected has in any way helped the species included. The lists themselves are examples of such shoddy work that it is embarrassing that such scientific imbecility exists in the country. If this is the quality of government expertise in butterflies, one fears to think of what contradictions and errors the remaining lists on the Schedules contain.

If butterflies or any other insects actually require protection, it is completely useless to ban their study. Most of the species included are so rare that there are only sporadic records from the pre-Independence period and no specimens in any Indian collection. A much better way of conserving insects is to discover populations of the target species and protect and monitor the habitat and population. But that will not serve the purpose of insecticide manufacturers.

References

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Post Script

Subsequent to writing the above, the Bill has now been sent by the Standing Committee of Parliament to the MoEFCC for final consideration. It is a relief to note that some of the inconsistencies noted above have been resolved.

Of the 120 butterfly species proposed by the MoEFCC, only 90 species have been proposed in the Bill returned by the Standing Committee. Note that the word "proposed" was used, not "retained", since there are some new entrants in the Bill now.

Among the astounding entrants are the Common Bluebottle (*Graphium sarpedon*) and the Glassy Bluebottle (*Graphium cloanthus*). Both of these are very common butterflies along the Himalaya and it is difficult to imagine a reason why they can be believed to require legal protection. Also, the White Dragontail (*Lamproptera curius*) has been replaced by the Green Dragontail (*Lamproptera meges*): the reason for the substitution is not at all clear, since both are locally common across their known range.

It is noted that the current provisions continue to hamper research on the subject in the country with unnecessary legal constraints. This matter will be examined in forthcoming issues.