

The problem of infrasubspecific names in some groups of Lepidoptera

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Abstract

Problems of availability, authorship and dates of names used for geographical forms in some groups of Lepidoptera, such as European butterflies and the genus *Zygaena* FABRICIUS, 1775, are discussed. For *Zygaena*, a practical solution is proposed which, if adopted, would lead to a stable nomenclature.

Zusammenfassung

Die Problematik der Verfügbarkeit, Autorschaft und Datierung von gebräuchlichen Namen für geographische Formen gewisser Lepidopterengruppen, z.B. europäischer Tagfalter und der Gattung *Zygaena* FABRICIUS, 1775, wird diskutiert. Für *Zygaena* wird eine praktische Lösung vorgeschlagen, deren Annahme zu einer stabilen Nomenklatur führen würde.

When early specialists such as Otto HOLIK, Manfred KOCH and Hugo REISS described and named geographical forms of *Zygaena* FABRICIUS, 1775, it was customary to denote such taxa as subspecies and varieties, the latter category being a subdivision of the former (individual forms were denoted as aberrations). This system was originally introduced by BURGEFF (1926a : 5 ; 1926b) and had it been followed consistently, the nomenclature of the group would now be relatively free of problems regarding availability, authorship and dates. However, up to the 1960s it was not uncommon for authors (specialists and non-specialists alike) to relegate subspecies to varietal level or, more frequently, to elevate varieties to subspecific rank. From the 1960s most newly described geographical forms were categorized as subspecies, because *Zygaena* specialists were more aware of the provisions of the *Int. Code zool. Nom.* and had begun to apply them to the group. Even before the publication of the 1961 edition of the *Code*, DUJARDIN (1956 : 252) stated "En application des Règles de la Nomenclature trinominale en vigueur, nous sommes actuellement dans l'obligation de réserver le terme de 'sous-espèce' à toute race ou forme géographique prédominante bien différenciée...".

Under the provisions of the *Code*, an infrasubspecific name such as a quadrinomen is unavailable. However, the question of availability, authorship and date does arise when a varietal name, originally established as quadrinominal, is raised to subspecific rank. The 1985 edition of the *Code* is more explicit than the two previous editions : Article 45 (f) (iii) states that a name is "infrasubspecific, if the author, when publishing the name, published it as an addition to a trinomen...". However, during the last three decades confusion has arisen over the availability, authorship and date of many of the names established for geographical forms, because of ambiguities in the 1961 and 1964 editions of the *Code*. In these editions, Article 17 (9) states that a name is or remains available even though "before 1961, it was proposed as a 'variety' or 'form'" ; Article 45 (e) (i) states "Before 1961, the use of either of the terms 'variety' or 'form' is not to be interpreted as an express statement of either subspecific or infrasubspecific rank" ; Article 45 (e) (ii) states "After 1960, a new name published as that of a 'variety' or 'form' is to be regarded as of infrasubspecific rank". When preparing the catalogue of *Zygaena*, REISS & TREMEWAN (1967) were guided by these articles ; fully aware of the inconsistent treatment of geographical forms by previous workers, and following current usage, they placed the majority of varieties at subspecies level and attributed the names to their original authors and dates.

Recently, KUDRNA (1983), KUDRNA & BALLETO (1984), BALLETO & KUDRNA (1986) and KOÇAK (1984) have drawn attention to the availability/unavailability of certain names established for geographical forms of European butterflies and *Zygaena*.

The paper by KUDRNA (1983) concerns the nominal taxa of Papilionoidea described by VERITY ; in the introduction (pp. 1-7), VERITY's concept of species, subspecies/exerge and race, and the nomenclatural problems arising from such a system, are fully described. As pointed out by KUDRNA, the most confusing category in VERITY's publications is the term "race", which has been misinterpreted by subsequent workers many of whom have treated the VERITY names originally proposed in this category as subspecific and thus available. Because of the widespread placement of VERITY's races at subspecific level, KUDRNA contends that such names should be treated as available if they were originally proposed in a trinomial combination. The views expressed by KUDRNA (1983) relative to the Papilionoidea are also reflected in the paper by BALLETO & KUDRNA (1986), which deals exclusively with the nominal taxa of Zygaenidae described by VERITY.

According to Article 45 (f) (ii) of the present *Code*, the names categorized by VERITY as "race" in a trinomial combination are indeed available. However, the question of availability does arise when a name, originally established by VERITY for a race, was published as a quadrinomen. For

example, having considered the two species *Zygaena rhadamanthus* (ESPER, 1794) and *Zygaena oxytropis* BOISDUVAL, [1828] to be no more than subspecies, VERITY (1920 : 161) established the taxon *pyrenaea* as a race of *Zygaena rhadamanthus rhadamanthus*. When *Z. rhadamanthus* and *Z. oxytropis* were re-established as distinct species by subsequent authors, *pyrenaea* was placed as a subspecies of the former (e.g. LE CHARLES, 1934 : 679).

If Articles 10 (c), 23 (j) and 50 (c) (i) of the present *Code* are followed, the name *pyrenaea* should be attributed to the first author who subsequently used it for a subspecies, with priority from that date. Unfortunately, the strict application of these rules to the genus *Zygaena* is impractical. In spite of meticulous attention to detail prior to the publication of their paper, BALLETO & KUDRNA (1986) erroneously attributed the nominal taxa *duponcheli* VERITY, 1921, *pulcherrima* VERITY, 1921, *pyrenaea* VERITY, 1920, and *pyrenes* VERITY, 1921, to REISS & TREMEWAN (1967), to cite only four examples from their list. These taxa were in fact first raised (as far as I can ascertain) to subspecies level by LE CHARLES (1934) more than 30 years before ; they are mentioned here merely as examples and not as a criticism of BALLETO & KUDRNA's excellent work. In fact, BALLETO & KUDRNA (1986 : 228) emphasise the futility of undertaking a thorough search of the literature published during the past 70 years, in order to ascertain who may have possibly validated a number of the 2000 names established by VERITY. Moreover, they point out the ambiguity of Article 10 (b) of the 1964 edition of the *Code* and state that, if broadly interpreted, any quotation of an infrasubspecific name at species or subspecies level can constitute availability of that name (this also applies to Article 10 (c) of the third edition of the *Code* (1985)). I fully agree with their opinion that such efforts contribute nothing to the advancement of science, especially as, in the case of *Zygaena*, the majority of such names will eventually be placed as synonyms.

KOÇAK (1984 : 156-158), in one of his papers criticising the work of LERAUT (1980), discusses the availability, authorship and dates of nine nominal taxa established for geographical forms of *Zygaena* species, attributing them to TREMEWAN (1961), TREMEWAN & REISS (1964) or REISS & TREMEWAN (1967). However, two of these taxa, *altalavandulae* REISS, 1953, and *tourrettica* REISS, 1953, were in fact cited as subspecies by REISS in 1958, while by inference *pyrenaica* BURGEFF, 1926, was raised to subspecies level by BERNARDI & VIETTE (1959 : 6). It should be mentioned that KOÇAK's emendation of *tourrettica* REISS to '*tourretica*' is unjustified as the original spelling is correct and based on the type-locality Tourrettes-sur-Loup.

The catalogue of *Zygaena* by REISS & TREMEWAN (1967) is currently being revised. The new edition will include all nominal taxa belonging to the subfamily Zygaeninae but will exclude the names of individual forms or

aberrations. It will also reflect recent research on geographical variation and a much broader concept of the subspecies category, resulting in a large number of new synonyms.

In attempting to produce a stable nomenclature, the difficulties arising from trinomina/quadrinomina are immediately apparent. If Articles 10 (c), 23 (j) and 50 (c) (i) of the present *Code* are applied to geographical forms of *Zygaena*, the enormous amount of time and effort required to search the literature cannot be justified, nor would it contribute to the advancement of science, as pointed out by BALLETO & KUDRNA (1986); moreover, a taxonomist can never be absolutely certain that an earlier citation has not been overlooked. With regard to *Zygaena*, one solution would be to attribute to its original author and date every nominal taxon now used at subspecific level, even if first established as quadrinomial before 1961; an application should then be made to the International Commission on Zoological Nomenclature requesting them to rule that the names first established as quadrinomina should nevertheless be attributed to their original authors and dates.

The purpose of the present paper is to highlight the problem, to review what has been done to date, and to solicit opinions and possible solutions from lepidopterists other than *Zygaena* specialists.

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Tremewan, W. Gerald. 1988. "The problem of infrasubspecific names in some groups of Lepidoptera." *Nota lepidopterologica* 10, 236–240.

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