

## *Triunia* names and lectotypifications: reply to Guymer and Forster

Peter M Olde

National Herbarium of New South Wales, Royal Botanic Gardens and Domain Trust,  
Mrs Macquaries Road, Sydney, NSW 2000, Australia  
[peter.olde@rbgsyd.nsw.gov.au](mailto:peter.olde@rbgsyd.nsw.gov.au)

### Abstract

The recent recognition of *Triunia kittredgei* Olde (Olde 2015) has been challenged by G.P. Guymer and P. Forster (2015) who have suggested that the name should be rejected and that the application of previous names should continue to apply in the genus *Triunia* L.A.S.Johnson & B.G.Briggs. They have argued that two varietal lectotypifications in *Helicia youngiana* C.Moore & F.Muell. by H. Sleumer (1955), varieties later recognised as species in the genus *Triunia*, should be overturned in favour of two later lectotypifications by D. Foreman (Foreman 1986). Their arguments are here separately examined and refuted.

### Introduction

C.T. White (1933) recognised specimens of *Helicia youngiana* from Queensland as comprising two varieties, var. *robusta* and var. *montana*, but did not cite holotypes. He listed all specimens in the protologue of var. *robusta* in varying degrees of prominence. In 1955, H.D. Sleumer lectotypified both varieties, citing *Kajewski 1219* (NSW - *haud vidi*) as the 'lecto-typus' of var. *robusta* and C.T. White [*s.n.*] (NSW - *haud vidi*) as the 'typus' of var. *montana*. In 1975, *Helicia youngiana* and its varieties were transferred to *Triunia*, a new genus erected by L.A.S. Johnson and B.G. Briggs (1975). In 1986, both varieties were recognised as distinct species, *Triunia robusta* (C.T.White) Foreman and *Triunia montana* (C.T.White) Foreman. In the same paper, Foreman lectotypified the two varietal names with different specimens to those of Sleumer, making no remark at the time about Sleumer's prior lectotypifications. In 1987, Foreman recognised a fourth species *Triunia erythrocarpa* from elements previously included in *T. robusta*, but included *Kajewski 1219* (BRI) in the citation of specimens.

Olde (2015) rejected Foreman's lectotypes as superfluous and therefore ineffective but noted also that neither of Sleumer's lectotypes were at NSW, their designated repository. Replacement lectotypes were explicitly designated from among the remaining isolectotypes; *Kajewski 1219* (BRI) for *H. youngiana* var. *robusta* and C. T. White *s.n.* (BRI) for *H. youngiana* var. *montana*. By including an isolectotype of *T. robusta* in the citation of specimens of his *T. erythrocarpa*, Foreman unwittingly invalidated his own name. Olde (2015) published the new name *Triunia kittredgei* for the species to which Foreman (mis)applied the name *T. robusta* and treated Foreman's *T. erythrocarpa* as a synonym of *T. robusta*.

Guymer and Forster (2015) challenged recognition of the name *Triunia kittredgei* Olde and the revised application of the name *Triunia robusta* (C.T.White) Foreman. They argued that the newly discovered prior lectotypes of *Helicia youngiana* var. *robusta* and *Helicia youngiana* var. *montana* designated by Sleumer

(1955), and the nomenclatural consequences flowing from them, should be rejected in favour of the later lectotypifications of Foreman (1986); that the nomenclatural status quo should be maintained. Guymer and Forster (2015) present a table (Table 1) in which the characters described in the protologue of *Helicia youngiana* var. *robusta* are compared with White's cited specimens and claimed that the character list shows that Sleumer's lectotypification of *Helicia youngiana* var. *robusta* (Kajewski 1219) is in serious conflict with the protologue. They argued that Article 9.19(b) of the code should apply. Additionally, they have rejected Sleumer's lectotype of *Helicia youngiana* var. *montana*, for which they had neither put forward a substantive argument nor argued against the validation outlined by Olde (2015).

## Discussion

***Triunia robusta*** (C.T.White) Foreman (1986).

**Basionym:** *Helicia youngiana* var. *robusta* C.T.White (1933).

**Protologue:** Guymer and Forster (2015, p. 457) have provided White's diagnosis of *Helicia youngiana* var. *robusta*. The remainder of the protologue states:

'This is the form the fruits of which are described by Bailey, l.c.' According to him they measure in the fresh state 1  $\frac{3}{4}$  in. (4.5 cm.) long and 1  $\frac{1}{2}$  in. (3.8 cm.) diam.

**Distribution:** This variety is confined to the subtropical rain-forests of Queensland. East Malanda lies within the tropics but its alt. 700 m., gives the forests a subtropical rather than tropical character.

**Locality records:** Maroochy (most southerly record), *F.M. Bailey, J. Low*. Yandina Eumundi, *F.M. Bailey, J.F. Bailey, J.H. Simmonds, J.B. Staer*. East Malanda, Atherton Tableland, alt. 700 m., common in rain-forest, *S.F. Kajewski, no. 1219* (flower buds), Sept. 22 (small to medium-sized tree; bark dark grey with numerous small white corky pustules, when cut light pink).'

**Lectotype** (Sleumer 1955): East Malanda, Atherton Tableland, alt. 700 m., common in rain-forest, *S.F. Kajewski, no. 1219* (flower buds), Sept. 22 1929 (NSW - 'lecto-typus, haud vidi'). *Typus* not found. Isolectotypes: A589471; B (*n.v.*); BRI-AQ317458; K001096591; MEL2277218A; NY2361410; NY2361411; S [S-G7589] ex NY. The duplicates at BRI and MEL were not cited by Sleumer, and it is possible that one of these was intended for distribution to NSW.

**Replacement lectotype** (Olde 2015): BRI-AQ317458.

**Superfluous lectotype** (Foreman 1986): Eumundi, xi. 1892, *J.H. Simmonds s.n.* (BRI-AQ317462); superfluous isolectotype: A589475.

**Residual syntypes** (additional to Foreman's lectotype above): Maroochie [Yandina], *F.M. Bailey s.n.*, Nov 1879 (MEL93791A); Maroochie [Yandina], *F.M. Bailey s.n.*, vii. 1888, (BRI022471 =BRI-AQ317456; MEL2277223A); Eumundi, *F.M. Bailey s.n.*, Nov 1892, (MEL2277217A); Eumundi, *J.F. Bailey & J.H. Simmonds s.n.*, xi. 1894 (BRI164313 =BRI-AQ317466; MEL2277221A) (the collectors cited by Foreman (1986) as *F.M. Bailey & J.H. Simmonds*); Eumundi, *J.F. Bailey s.n.*, May 1892 (BRI-AQ104858); Eumundi, *J.F. Bailey s.n.*, 1900 (A589477; BRI164317 = BRI-AQ317470; MEL2277219A; MEL2277220A; NSW169006!); Maroochie [Yandina], *J. Low s.n.* (BRI164316 = BRI-AQ317464; MEL2277222A); Eumundi, *J.H. Simmonds s.n.*, May 1892 (BRI-AQ105362); Eumundi, *J.B. Staer s.n.*, xi. 1892 (BRI164312 (*n.v.*); Eumundi, *J.B. Staer s.n.*, Oct. 1911 (NSW169005!). This list is expanded from that provided by Olde (2015).

**Notes:** The main thrust of White's paper, in which varieties were erected in *Helicia youngiana*, was concerned with the specimens collected by Australian-born plantsman Mr. Sethric 'Frank' Kajewski (1904–1997), who was employed by the Arnold Arboretum of Harvard University for five years to collect plant specimens in the South Pacific Islands and who returned and collected in North Queensland from May to December 1929. This can be gleaned from its title "Ligneous plants collected for the Arnold Arboretum in North Queensland by S.F. Kajewski in 1929." However, the work extends beyond these specimens, especially in his treatment of *Helicia youngiana*.

The underlying problem is that White (1933) included specimens of what are now considered two taxa in his concept and description of *Helicia youngiana* var. *robusta*. Olde (2015) argued that the name *Triunia robusta* (C.T.White) Foreman had been incorrectly applied to one of these two taxa because Foreman not only overlooked Sleumer's lectotypification but lectotypified it superfluously with a different specimen, that application of the name *T. robusta* to Sleumer's lectotype left the other taxon unnamed, and that the name *Triunia kittredgei* Olde therein described effectively remedied that situation. The name *Triunia robusta* correctly applied requires that *Triunia erythrocarpa* Foreman be synonymised under it.

Guymer and Forster (2015) have asserted that Sleumer's lectotypification of *Helicia youngiana* var. *robusta* C.T.White is in serious conflict with the protologue and should be superseded by Foreman's lectotypification, which is in better agreement with it. Their argument is here examined.

There can be little doubt that all the specimens cited in the protologue of *Helicia youngiana* var. *robusta* C.T.White were used to compile its description. Among the cited specimens is *Kajewski 1219*, the extensive details of which are fully spelt out in the protologue, in comparison with the remaining synonyms which are cited by their general location and collector only. The prominence and detail associated with this citation and the title of White's paper itself presumably influenced Sleumer in selecting *Kajewski 1219* as the lectotype. At the time of Sleumer's lectotypification, there was no suggestion that two taxa might be recognised in the variety.

Guymer and Forster (2015) argued that features mentioned in White's diagnosis apply better to *Simmonds s.n.* than to *Kajewski 1219*. However, the evidence offered for the supersedence of Sleumer's lectotypification in their Table 1 is considered here to be flawed and inadequate. White's diagnosis of *Helicia youngiana* var. *robusta* makes much use of the range-extending words 'up to' which Guymer and Forster ignore in their comparisons. The majority of characters are covered by White's use of these critical words and Sleumer's lectotype falls within those given ranges. In regard to leaf length cited in White's diagnosis, it is unclear whether this includes the petiole or not.

Three characters not covered by range-extending words are White's description of the adaxial surface of the leaf as 'smooth and very shining', the bud size and shape, and the fruits.

Guymer and Forster have suggested that White's use of the words 'very shining above' is in conflict with the leaf surface of the *Kajewski* specimen, which they describe as only 'slightly shining'. This is a subjective interpretation, not reflected in the images published in Olde (2015), and in any case a minor variance. Others might equally describe the surfaces of both as 'shiny'. However, White also described the adaxial surface of the leaves as smooth, a character not mentioned by Guymer and Forster, but which, when surfaces are compared, goes some way to support their argument of conflict between the *Kajewski* specimen and the protologue. The scattered asperities and dimpled adaxial surface of the leaf of *T. robusta* was seen in Olde's 'Revised Key to species of *Triunia*' as one of a number of critical characters that distinguish *T. kittredgei* from *T. robusta* (correctly applied). It could be argued perhaps, that the uneven leaf surface on the *Kajewski* specimens were thought by previous authors, including White, to be unworthy of comment. Certainly, no other author has made mention of it. However, this conflict alone does not justify rejection of Sleumer's lectotype, especially when cast against one of White's main intentions; the classification and naming of *Kajewski* specimens. It is only one of several critical characters outlined by Olde in the key. On this point, Olde's key should be amended at key lead 1\* (Olde 2015, p.189) and the word 'smooth' deleted. There is no alternate choice in the dichotomous couplet at 1, and the word is factually incorrect positioned prior to the following couplet.

All the specimens of *Kajewski 1219* are in young bud and not covered by the protologue, which states the buds are 'cylindrical, 1.5 cm long'. It is possible that White intended the description for specimens with mature buds or perhaps unintentionally omitted the qualifying words 'up to' but, in any event, buds are not a diagnostic character in the genus, since all adult flowers are of similar size and the young inflorescences similar in shape. Bud length is merely an ontogenetic state and in their table of comparison Guymer and Forster do not mention that the bud length (and shape) on the *Kajewski* specimen also applies to other specimens at a similar stage of development.

Fruits, cited in the protologue, are not present at all in either the *Kajewski* or the *Simmonds* collections and are not relevant to a comparison and discussion of these two specimens. A logical consequence of the argument put forward by Guymer and Forster requires that both Sleumer and Foreman should have chosen a lectotype with fruit.

Therefore, the evidence presented by Guymer and Forster in support of the argument that Sleumer's lectotype is in serious conflict with White's protologue, is here considered to be weak and inadequate because it ignores critical words in the protologue. In addition, it does not demonstrate conflict on any diagnostic character except the one pointed out here, and does not address White's intention to describe *Kajewski*'s specimens, including *Kajewski 1219*. For the above reasons, there can be no reasonable objection to Sleumer's selection of *Kajewski 1219* as the lectotype, with independent reviews by experienced nomenclaturists affirming this assessment. However, this does not deny the argument that one particular specimen would make a better lectotype than another, but it has no relevance when the selected lectotype is not in serious conflict with the protologue. At the time of its selection by Sleumer, there was no suggestion that the specimen might represent a different species. Nor has the suitability of Sleumer's lectotype been questioned by anyone in the past sixty years. Moreover, the matter was not raised by Foreman (1986, 1987, 1995), who had unfortunately overlooked it.

It must be noted that there are any number of accepted lectotypes for which a better specimen could have been chosen, or do not fully match the protologue on every point. By way of example, the lectotype of *Grevillea leptobotrys* Meisner (1848, pp. 256–7) which has an extensive Latin protologue (NY284642, *fide* D.J. McGillivray & R.O. Makinson (1993, p. 425)), is a fragmentary specimen in a packet, barely sufficient for the name to be correctly applied, even though many suitable specimens more conformant with the protologue were available.

Acceptance of Guymer and Forster's argument could trigger and justify a whole raft of better re-lectotypifications that, notionally, may completely overwhelm the nomenclature. It is indisputable that many cases could be cited where lectotypes do not exactly match described taxa in every minute detail. No two plants are ever exactly identical. All that the Code requires is that the lectotype is a close approximation to the concept of the taxon adopted by the describing author, and could not alternatively be assigned to some other recognised taxon. In the Code, interpretation of the word 'serious' is subjective and there is an inference that disagreements arising from it should be resolved by consensus formed after individual and institutional examination of the arguments, rather than by a formally designated resolution mechanism or arbitrator. One solution might be the formal referral of similar disputes to the Nomenclature Committee for Vascular Plants by including such tasks in its remit. In this case, the Code itself would need some minor alteration and clarification.

Guymer and Forster (2015) also incorrectly assert (p. 458) that Foreman (1986) 'did not accept' Sleumer's earlier lectotypification. This statement must have been inferred since Foreman himself made no such statement. Its basis is perhaps the Kajewski specimen at K (K001096591) which bears an annotation by Sleumer and a label by Foreman. Sleumer has annotated the specimen with the words 'Lecto-Isotype!' 'Revised for the Flora Malesiana, dated and signed by H. Sleumer 11/54'. Foreman's label states '*Triunia erythrocarpa* Foreman Not part of the lectotype of *Helicia youngiana* var *robusta*. Signed and dated by D. Foreman 17/12/1996'. However, Foreman did not follow any formal procedure to overturn Sleumer's published lectotypification, and did not mention in any of his taxonomic treatments that Sleumer had previously lectotypified it. Furthermore, had he known, Foreman surely would not have included the Kajewski specimen in the protologue of his circumscription of *Triunia erythrocarpa* Foreman, thus rendering that name illegitimate. The evidence on the Kew specimen shows only that Foreman saw Sleumer's annotation ten years after his own superfluous lectotypification and retrospectively sought to reaffirm it.

Since Article 9.19 of the Code requires that 'the author who first designates (Art. 7.9 and 7.10) a lectotype ... in conformity with Art. 9.11–13 must be followed', it is again asserted here that the name *Triunia robusta* applies to the species known currently as *T. erythrocarpa*, and that *T. erythrocarpa* must be synonymised under it. The name *Triunia kittredgei* Olde is correctly applied to the species in south-eastern Queensland formerly known as *T. robusta* after the name was vacated.

***Triunia montana*** (C.T.White) Foreman (1986).

**Basionym:** *Helicia youngiana* var. *montana* C.T.White (1933).

**Protologue:** 'Leaves entire, elliptic or elliptic-lanceolate, up to 11 cm. long and 5 cm. wide, apex acuminate often lengthily so, coriaceous, smooth and glossy on both surfaces. Racemes up to 6 cm long, pedicels up to 5 mm long, rhachis and pedicels densely hirsute as in the typical form. Buds not seen. Individual bracts (described from a few persistent ones in old inflorescences) 1 cm long, 5 mm broad. Fruit not seen.'

**Distribution:** Only known from the higher parts of the Bellenden Ker Range, northeastern Queensland.

**Locality Records:** Bellenden Ker, Palm Camp, *F.M. Bailey* (Meston's Bellenden Ker Exped. 1889). Bellenden Ker (near the summit), *C.T. White*, Jan. 1923.'

**Lectotype** (Sleumer 1955): [Queensland] Bellenden-Ker, near the summit: [*C.T.*]White [Jan. 1923] (NSW – 'typus, haud vidi'). *Typus* not found at NSW.

**Replacement lectotype** (Olde 2015): Queensland: Cook: Bellenden-Ker, near the summit, *C.T. White s.n.*, Jan 1923 (BRI-AQ317460 – photo seen); isolectotypes MEL2277215A (*n.v.*); MEL2277216A (*n.v.*).

**Superfluous lectotype** (Foreman 1986): [Queensland] Bellenden Ker, Palm Camp, *F.M. Bailey s.n.* (Meston's Bellenden Ker Exped. 1889) BRI164626.

**Residual syntypes:** Bellenden Ker, Palm Camp, *F.M. Bailey s.n.* (Meston's Bellenden Ker Exped. 1889), BRI-AQ317454 (photo seen); MEL2277213 (*n.v.*).

Sleumer (1955) lectotypified the name using the White specimen given in the protologue by citing it as 'typus, haud vidi' and its repository as NSW. Foreman (1986) superfluously lectotypified with the Bailey specimen. Since Sleumer's lectotype cannot be found at NSW, Olde (2015) designated another sheet of the White specimen in BRI (BRI-AQ317460) as replacement lectotype.

Sleumer selected one of White's two syntypes unseen ('haud vidi') and gave an assumed but incorrect herbarium location for it. Whereas Olde has argued that Sleumer's lectotypification is effective and that one of the three isolectotypes for this syntype can serve as the lectotype, Guymer and Forster have inferred that Sleumer's lectotypification is not effective by stating (p. 459) that Olde (2015) assumed that Sleumer (1955) lectotypified *H. youngiana* var. *montana* C.T.White. They implied, that Sleumer, by referring to a 'non-existent specimen at NSW' that he had not seen, failed to effectively lectotypify the name. They recommended acceptance of Foreman's later alternative lectotypification in which the alternative syntype is cited, by stating that it should be accepted as the 'first'. The argument is academic because the name *Triunia montana* is not in dispute. However, there was no attempt by them to address the argument presented by Olde (2015, p. 191) that 'The International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) (McNeill et al. 2012), does not require a lectotype to be seen by its designator. However, if the lectotype is effectively lost, under Article 9.11, a lectotype as a substitute for it may be designated.'

It is perhaps surprising that a lectotype, designated unseen and its repository incorrectly assigned, does not invalidate the lectotypification. However, there is no requirement in the Code for the typifying author to have seen the lectotype being designated; an explanation that was clearly made by Olde (2015) and confirmed by Mr N. Turland (pers. communication) who was consulted on the validity of Sleumer's lectotypification. The debate serves to illustrate a relatively obscure feature of the code concerning valid lectotypification. Sleumer's lectotypification of *Helicia youngiana* var. *montana* C.T.White, later recognised as *Triunia montana* (C.T.White) Foreman, is entirely effective and due credit must be given to him for it. Although the Foreman lectotype admittedly has better qualifications for selection, as pointed out by Guymer and Forster (*l.c.*), the Sleumer lectotype is not in serious conflict with the protologue and must stand.

### Summary

Guymer and Forster have essentially argued that Sleumer's lectotypifications of two varietal names under *Helicia youngiana* are invalid and should be overturned in favour of those later designated by Foreman. However, they have not demonstrated that Sleumer's lectotypes are in serious conflict with C.T. White's protologues and their argument must be rejected. If they wish to change this situation then a case for conservation of the name *Triunia robusta* over *T. kittredgei* must be made. This is an entirely separate argument and one that is perhaps not really supportable in so small a genus with little cognate literature and low usage impact. While acknowledging the difficulties associated with name changes in [Australian] taxonomy, the unfortunate change put forward by Olde (2015) is no different from many others in the literature and should be accepted. The correct name for *Triunia* populations previously referable to *Triunia robusta* is *Triunia kittredgei*. The name *Triunia robusta* correctly applied requires that *Triunia erythrocarpa* Foreman be synonymised under it.

### Acknowledgments

Special thanks to Dr Peter Wilson (NSW) and Nick Turland (B) for opinions on the validity of the two lectotypifications under discussion, to Karen L. Wilson, Senior Research Scientist (NSW) for peer-review of this manuscript which has subsequently been modified, and to two anonymous referees.

### References

- Foreman DB (1986) A new species of *Helicia*, new combinations and lectotypification in *Triunia* (Proteaceae) from Australia. *Muelleria* 6: 193–196.
- Foreman DB (1987) New species of *Xylomelum* Sm. and *Triunia* Johnson & Briggs. *Muelleria* 6: 299–306.
- Foreman DB (1995) *Triunia*. In McCarthy PM (ed.) Flora of Australia Vol. 16. (ABRS: Canberra)
- Guymer GP, Forster P (2015) *Triunia kittredgei* Olde (Proteaceae) a name to be rejected. *Austrobaileya* 9: 457–460.
- Johnson LAS, Briggs BG (1975) On the Proteaceae—the evolution and classification of a southern family. *Botanical Journal of the Linnean Society* 70: 83–182 <http://dx.doi.org/10.1111/j.1095-8339.1975.tb01644.x>
- Kajewski SF (1904–1997) Papers 1928–1933. *Archives of the Arnold Arboretum of Harvard University* [http://arboretum.harvard.edu/wp-content/uploads/III\\_SFK\\_2012.pdf](http://arboretum.harvard.edu/wp-content/uploads/III_SFK_2012.pdf)
- McGillivray DJ and Makinson RO (1993) *Grevillea*, Proteaceae: a taxonomic revision. (Melbourne University Press: Carlton, Victoria)

- McNeill J, Barrie FR, Buck WR, Demoulin V, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Marhold K, Prado J, Prud'homme Van Reine WF, Smith GF, Wiersema JH, Turland NJ (2012) International Code of Nomenclature for algae, fungi, and plants (Melbourne Code): Adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011. *Regnum Vegetabile* 154 (Koeltz Scientific Books: Königstein)
- Meisner CF (1848) Proteaceae. In Lehmann JGC (ed.), *Plantae Preissianae* 2: 245–268. (Meissner: Hamburg)
- Olde PM (2015) *Triunia kittredgei* Olde (Proteaceae: Grevilleoideae: Roupaleae), a new name for *Triunia robusta sensu* Foreman misapplied. *Telopea* 18: 187–199.
- Sleumer HO (1955) Studies in old world Proteaceae. *Blumea* 8: 1–95.
- White CT (1933) Ligneous plants collected for the Arnold Arboretum in North Queensland by S.F. Kajewski in 1929. *Contributions from the Arnold Arboretum of Harvard University* 4: 1–113.

Manuscript received 15 February 2016, accepted 28 May 2016