

What is the correct name for the Dunkeld Hybrid Larch (*Larix decidua* x *L. leptolepis*)?

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ABSTRACT

The name *Larix x eurolepis*, widely used for the larch hybrid originally raised at Dunkeld in Scotland between *L. leptolepis* (Japanese larch) and *L. decidua* (European larch) is shown to be invalid and, it is argued, should be replaced by the earlier valid name *L. x henryana*, which commemorates Augustine Henry. However, it is noted that if the parentage of *L. x marschlinsii* can be determined beyond reasonable doubt, this name could take priority over the other two. At present *L. x marschlinsii* is considered to have arisen when *L. leptolepis* crossed with either *L. sibirica* (Siberian larch) or *L. decidua*.

This paper was written to draw attention to some unfortunate nomenclatural irregularities relating to the hybrid larch raised at Dunkeld, Scotland, and commonly, but it seems incorrectly, called *Larix x eurolepis*. In the paper, I touch on matters relating to larch hybrids which can only be satisfactorily settled by detailed taxonomic studies of several taxa whose parentage is disputed; such studies, probably requiring breeding experiments followed by detailed morphological studies, are beyond the scope of this author but might usefully be undertaken by other persons with access to living plants of these hybrids and with a fuller knowledge of the taxonomy and biology of larches.

H. J. Elwes (1906) drew attention to the possibility that seedlings raised from Japanese larch (*Larix leptolepis* (Sieb. & Zucc.) Gord.; syn. *L. kaempferi* (Lamb.) Sarg.) growing near some European larches (*L. decidua* Mill.) at Dunkeld, Perthshire, might be hybrids between these two species, in the monograph he wrote with Augustine Henry, titled *Trees of Great Britain and Ireland*. Later,

Henry coined the Latin name *L. x eurolepis* for this hybrid (see Henry & Flood 1919) and this is the name widely used by foresters and botanists. However, under the International Code of Botanical Nomenclature, Henry's Latin name is invalid and should be abandoned.

The rules of plant nomenclature, laid down in the International Code, are both strict and complicated, but there are two important principles which are basic to the problem of the name for the Dunkeld hybrid larch. Firstly, the Latin binomial of a plant species or hybrid, is only valid if it is published with a description or diagnosis (defined as "a statement of that which in the opinion of its author distinguishes the taxon from others"). Secondly, the correct name for a taxon, below the rank of genus (e.g. a species or interspecific hybrid) is the "earliest available legitimate" one. When these principles are applied to the available Latin names for the Dunkeld larch, the most widely used name, *Larix x eurolepis*, is found to be not the earliest valid name.

Henry and Flood (1919) documented the history of this hybrid, noting that seedlings had been repeatedly raised from the Japanese larch trees which were growing at Dunkeld near numerous European larches. The seedlings not only showed more rapid growth (hybrid vigour) but were also different in habit, morphology and leaf anatomy from their mother trees. Henry and Flood (1919) concluded that the seedlings were the result of cross-pollination of the *Larix leptolepis* trees by pollen from the adjacent *L. decidua*. Henry read the paper containing these observations to the Royal Irish Academy on June 23, 1919, but the paper, incorporating the description of the hybrid as demanded by the rules of nomenclature, was not published until September 25, 1919 (see Henry & Flood 1919, p. 55); there is no earlier publication containing Henry's full description of this plant nor any diagnosis as defined by the rules of nomenclature.

To complicate this story, Alfred Rehder published descriptions of new species and varieties of plants, including conifers, contained in the collections of the Arnold Arboretum, Massachusetts, in July 1919. This paper included a description of a hybrid larch, which he named *Larix x henryana*. Rehder (1919) noted that the hybrid had been mentioned by Elwes and Henry (1907) and that the Arnold Arboretum had received seedlings at Dunkeld; these were raised from the same mother Japanese larches whose progeny Henry had studied. In the present collections at the Arnold Arboretum, there are five living plants, labelled *Larix x eurolepis*, which were received from the Marquess of Tullinbardine, Dunkeld, Scotland, on December 15, 1910 (Spongberg, pers. comm. 1978). Rehder (1919) did not have cones available when he published his description of the larch hybrid, but the omission of a description

of the cones does not make the name invalid as the published description is still adequate for identification of the hybrid; that is, the description is diagnostic. In any case there can be no doubt about the identity of the plant Rehder named as it is still growing in the Arnold Arboretum and an herbarium specimen is preserved (see appendix). Later Rehder (1949) realised that his *Larix x henryana* and *L. x eurolepis* were the same hybrid, and relegated his name to synonymy. but Rehder's name was validly published on July 21, 1919, so that it is an earlier legitimate name, and must replace Henry's one.

Henry was aware of Rehder's publication by the time (September) he published his paper, for he commented that "Mr. Rehder has not seen cones of this tree, and his description relates to the naked eye characters of the twigs and leaves of young trees. . . His name is invalid, being later than *Larix* [x] *eurolepis*, which was published by me with a short but adequate description in the *Irish Times*, 24th June, 1919, page 4." In fact the article in the *Irish Times* contains no description of the hybrid, nor any diagnosis (see above) — the only phrase which is remotely descriptive or diagnostic is ". . . seedling which are very vigorous . . ." This cannot be accepted as sufficient to validate Henry's Latin name, which is quoted in the report. The article is a straight forward account of the meeting of the Royal Irish Academy, and does not constitute a valid description of the hybrid; the article is unsigned.

In the *Gardener's Chronicle*, dated 5th July, 1919¹ (p. 4.) there is another report of the Academy meeting in which the name "*Larix eurolepis*" is again noted. However, this article does not contain a description or diagnosis either; there is a statement that the hybrid seedlings "are intermediate between the two species in the anatomical characters of the leaves, in the colour and shape of the bracts and scales of the cones, in the colour of the twigs and other details" but this is not diagnostic since none of the differences is clearly stated. Indeed there are other arguments that may be used to reject this article as the place of valid publication; for example, it may be argued that the name is only "mentioned incidently" which means it is not validly published.

Thus despite these published reports, Henry's protestations, and his incorrect assertion that his name had priority — an assertion uncritically accepted by taxonomists since 1919 — the name *Larix x henryana* has priority.

To complicate matters further, another Latin name, *Larix x hybrida* seems to have been applied to this hybrid in a *Catalogue of new and Rare plants*, published in 1916, by the American nursery of R. and J. Farquhar & Co., Boston (see Rehder 1917, 1919). This

1 Rehder (1949) incorrectly dated this paper January, 1919.

name is invalid for a number of reasons; it was published without a description, and had been applied previously to the progeny of another hybrid between *Larix americana* Michx. (correctly *L. laricina* (Du Roi) C. Koch) and *L. dahurica* Turcz. (Schroder 1894).

However, the problem does not end there, for there is another hybrid larch which was named in 1917, *Larix x marschlinii* Coaz. Coaz (1917) noted that seedlings raised from a Japanese larch growing in the arboretum of Tscharnerholz, at Murten, Switzerland, were different from the parent species. The three parent plants of *L. leptolepis* (= *L. kaempferi*) were growing beside a group of *L. sibirica* Ledeb. trees. However Coaz, having studied the Japanese larches' seedlings growing near the castle at Marschlins, suggested that the colour of the female flowers of these plants, which was red, indicated the *Larix decidua* could have been the other parent, since it too has red female flowers; the Japanese larch has whitish-green flowers. Coaz thus enquired if *L. decidua* trees were also present at Tscharnerholz, and was informed that there were two groups; one about 50 metres distant, and the second, older group — “. . . a forest of more flourishing larch trees about 100 years old. . .” — was about 400 metres to the southwest of the Japanese larches. This led Coaz (1917) to conclude that the plants at Marschlins were the result of cross-pollination of the *L. leptolepis* mother trees by pollen from the distant trees of *L. decidua*. Henry (see Henry & Flood 1919) was not so easily convinced. He also enquired about the parents, and quoted M. Liechti, Inspector of Forests at Morat in Switzerland, as stating that “in all probability” the Marschlins plants were hybrids of *Larix leptolepis* and *L. sibirica*.

Henry added that “this is not absolutely certain, as there is a group of old trees of ordinary European larch about 400 metres distant from the mother Japanese tree, the pollen of which might have been blown on the young cones of the latter.” However Henry stated that “it is very probable that the pollen came from [the] Siberian larches. . . It would seem, then that *Larix x marschlinii* is a cross between *L. leptolepis* and *L. sibirica*; but further investigation is required.” To date, no one seems to have taken up Henry's suggestion, and studied these plants in detail.

Two monographs on *Larix* have appeared since Henry wrote his paper. The first was by Ostenfeld and Larsen (1930). They commented that “Coaz can only be understood to mean, that he believes he had observed the cross of *L. kaempferi* [sic] x *decidua*; but others [meaning Henry, and Dallimore and Jackson (1925)] are of the opinion that it is *L. kaempferi* x *sibirica*.” They said that, due to the doubts expressed, it would be best “to neglect” Coaz's opinions “entirely”.

Bobrov (1972) is sure that *L. x marschlinsii* and the Dunkeld hybrid have the same parents. He commented that dendrologists often use different binary Latin names, giving as examples *L. x henryana* and *L. x marschlinsii*, for reverse and direct crosses. However, he was incorrect to suggest that *L. x eurolepis* is the reverse cross of *L. x marschlinsii* and *L. x henryana*; all of these names are applied to hybrids whose mother species is *L. leptolepis*, the pollen parent being *L. decidua*, or, if Henry's idea is accepted for *L. x marschlinsii*, *L. sibirica*.

Bobrov (1972) is generally critical of the taxonomic concepts of West European dendrologists with respect to larches, and their hybrids. He accepts the view that *L. x marschlinsii* is the result of a cross between *L. leptolepis* and *L. decidua*, without discussing the objections raised by Henry, or providing evidence that the parentage is established beyond doubt. Coaz's *L. x marschlinsii* should repay detailed anatomical study, but it is not a commonly planted tree in the British Isles and fresh material is impossible to obtain. If its parentage can be established beyond reasonable doubt, and the parents are shown to be *L. leptolepis* and *L. decidua*, (the same as *L. x henryana*) then *L. x marschlinsii* is the earliest available name for the Dunkeld hybrid and must replace both *L. x eurolepis* and *L. x henryana*. This is Bobrov's conclusion. If *L. sibirica* can be shown to have been the pollen parent, then *L. x henryana* is the correct name for the Dunkeld hybrid, and *L. x marschlinsii* will apply only to the cross *L. leptolepis* x *L. sibirica*.

Whatever the outcome of this problem, Henry's name for the Dunkeld hybrid larch is invalid, in that it was published after Rehder had described and named *L. x henryana*. To continue to use *L. x eurolepis* is contrary to the rules of botanical nomenclature. This conclusion means that a well-established name is no longer permitted by internationally agreed rules. As long as the International Code of Botanical Nomenclature continues not to permit the conservation of such specific names, this kind of undesirable change will continue to be imposed upon botanists and others. Until the hybrid *L. x marschlinsii* is investigated in detail, it may be suggested that the name *L. x henryana* be used for the Dunkeld hybrid larch — a strangely appropriate name for a tree which Augustine Henry studied.

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APPENDIX

Typification of *L. x eurolepis* A. Henry and *L. x henryana* Rehd.

Under the International Code of Botanical Nomenclature it is desirable, indeed necessary, to designate an herbarium specimen as the type specimen for an individual species or interspecific hybrid. Neither Henry (Henry & Flood 1919) nor Rehder (1919) did so. This is done below.

L. x eurolepis A. Henry

Although this name is considered to be no longer valid, it should be typified. In his protologue Henry did not cite a type specimen, but within the paper (Henry & Flood 1919), Henry remarked that "it is now proposed to apply to the "hybrid Dunkeld larch" . . . the name *Larix eurolepis* . . . and to give . . . the results of a careful study of the material obligingly sent by Mr. A. Murray, forester at Murthly, and Mr. D. Keir, forester at Dunkeld." Henry does not mention having access to living material. In Henry's personal herbarium, now called the Augustine Henry Forestry Herbarium, deposited at the National Botanic Gardens, Glasnevin (DBN) (see Walsh 1957), there are three specimens labelled *Larix x eurolepis*, which could have been used by Henry during this work. One is labelled "Murthly No. 4, 25.2.15". The other two are labelled "Hybrid larch Dunkeld 1/8/12". None of the other specimens in his herbarium was collected before the publication of his paper in September 1919.

As the specimen from Murthly is the only one which includes cones, which Henry certainly studied (see photo in Henry & Flood 1919), it is designated as the lectotype.

L. x henryana Rehd.

Like Henry, Rehder cited no specimen in his protologue; he simply made the statement that "plants received from Dunkeld are growing at the (Arnold) Arboretum. . ." In the Arboretum's herbarium there is only one specimen of this plant collected by Rehder before the publication of his description; it is labelled "*Larix decidua x leptolepis* Arb. (Dunkeld) 6103 Sept. 14, 1917". The accession number 6103 was for "Plants, received from the Marquess of Tullinbardine, Ladywell, Dunkeld, Scotland, on 15 December 1910" (annot. S. A. Spongberg, 9 April 1980). Although it does not bear the binomial, it was collected and annotated by Rehder, and it is designated as lectotype.

L. x marschlinsii Coaz

It has not been possible to trace any type specimen of *L. x marschlinsii*. It is possible that none was collected and preserved.

Specimens cited

L. x henryana Rehd.

lectotypus: Arb. (Dunkeld) 6103 (ie. cult. Arnold Arboretum ex Dunkeld), 14 Sept. 1917, A. Rehder. A.

L. x eurolepis A. Henry

lectotypus: Murthly No. 4 (Scotland), 25 Feb. 1915, s.n. [A. Murray]. DBN.