

HUNTIA

A YEARBOOK OF BOTANICAL AND HORTICULTURAL BIBLIOGRAPHY

VOLUME 2

15 OCTOBER 1965

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PITTSBURGH PENNSYLVANIA

HUNTIA

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Subscription price: \$7.50 (us) a volume (paper), \$8.50 (cloth).

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The five brethren of the rose: an old botanical riddle

William T. Stearn

*Quinque sumus fratres, et eodem tempore nati,
Sunt duo barbati, duo sunt barba absque creati.
Unus et e quinque non est barbatus utrinque.*

*On a summer's day, in sultry weather,
Five brethren were born together.
Two had beards and two had none,
And the other had but half a one.*

SO RUN TWO VERSIONS of an old riddle. I first heard it many years ago from the late Edward Augustus Bowles (1865-1954), who had it, I believe, from Canon Henry Nicholson Ellacombe (1822-1916), who probably learned it from his father the Rev. Henry Thomas Ellacombe (1790-1885). In this way from person to person, rather than from book to book, it has been passed on for centuries, going back to the Middle Ages, before the invention of printing. To find it in print requires, indeed, considerable search, and the versions found differ much in wording, which points to long transmission by word of mouth. Who or what are these strange five brothers, all born at the same time of the same mother, two bearded, two beardless, and one with only half a beard?

The answer, by no means obvious to anyone but a student of aestivation in *Rosa* or the writings of the Norwich doctor, Sir Thomas Browne (1605-82), is given in the latter's learned and fantastic essay on *The garden of Cyrus or the quincuncial, lozenge or net-work Plantations of the Ancients artificially, naturally, mystically considered* (1658). Here Browne wrote that,

. . . nothing is more admired than the five Brethren of the Rose, and the strange disposure of the Appendices or Beards, in the calicular leaves thereof. For those two which are smooth and of no beard are contrived to lye undermost, as without prominent parts and fit to be smoothly covered, the other two which are beset with Beards on either side,

stand outward and uncovered, but the fifth or half-bearded leaf is covered on the bare side but on the open side stands free, and bearded like the other.

The five brothers are, in short, the five sepals of *Rosa canina* and other dog-roses (Fig. 46-A). The manner in which the parts of the calyx and corolla are disposed within the unopened flower is constant for whole groups of plants and is technically known as *aestivation*. There exist various types, as *valvate* when the parts merely touch along the edge without overlapping, *contorted* when they overlap along one edge only, and so on. The kind of imbricate or overlapping aestivation occurring in *Rosa* and other genera with five sepals is called *quincuncial* (Fig. 46-B). Here two of the five are completely outside the others and, in *R. canina*, have appendages or beard along both edges; two with plain unappendaged edges are completely overlapped along the edges by other sepals; the fifth has one edge appendaged and outside, its other edge plain and inside, in other words it has only half a beard.

Roses were favourite flowers in monastic gardens and it is a fair supposition that this riddle was invented in a medieval abbey in Germany, but no-one knows where, when, or by whom. W. Rytz in *Gesnerus* 14: 76 (1957) attributes it to Albertus Magnus (1193-1280) of Regensburg. Ellacombe in *Cornhill magazine* (July 1905) wrote that the earliest version he had traced was quoted by Fumarellus (Antonio Fumanelli?) in 1557. However J. C. Rosenberg, *Rhodologia seu philosophico-medica generosae rosae descriptio* (1628) does not quote it, although he describes the rose-bud (p. 188) in words which suggest it: "Alabastri sunt calycis partes laciniosae***quae quidem quinque sunt ut plurimum; duae nimirum barbatulae; duae imberbes; & quinta partim barbata, partim imberbis."

Johann Herrmann (1738-1800) of Strasbourg in his *Dissertatio inauguralis botanico-medica de Rosa* p. 12 (1762) describes the calyx of *Rosa canina* in a similar manner: "Calycis foliola in longum apicem producta, duobus utrinque, uno ab alterutro tantum latere pinnatis, duobus integris." He then adds—

Vetus hinc etiam aenigma ortum traxit:

Quinque sunt fratres,

Tres sunt barbati,

Sine barba sunt duo nati,

Unus ex his quinque

Non habet barbam utrinque.

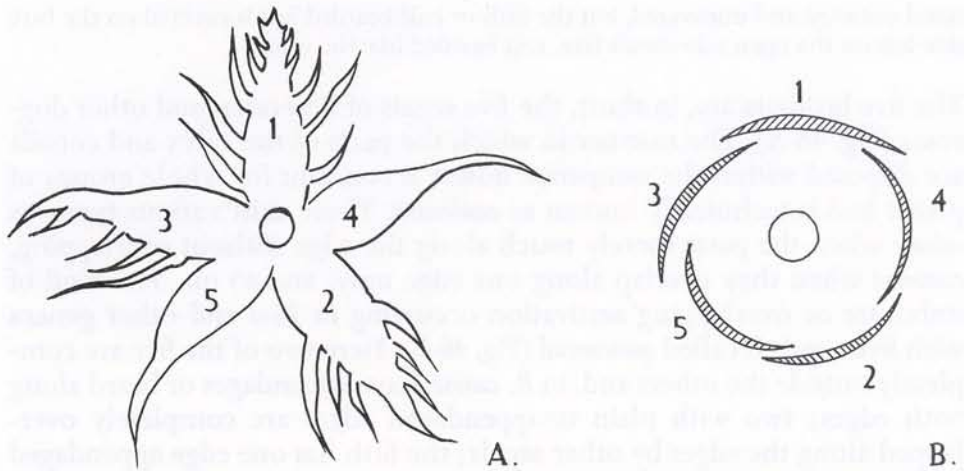


Fig. 46. Diagram of rose calyx. A, calyx expanded, showing three "bearded" segments, and two "beardless." B, same, in section, showing relative positions of segments.

Redrawn from sketch by W. T. Stearn

Scarcely different is the version quoted in Wilhelm Troll's *Praktische Einführung in die Pflanzenmorphologie* 2: 13 (1957):

Quinque sunt fratres.
 Duo sunt barbati,
 Duo sine barba nati.
 Unus e quinque
 Non habet barbam utrinque.

There is also the version published by Adrian Hardy Haworth (1767-1833) in his *Miscellanea naturalia* p. 197, footnote (1803) and by W. Rytz in *Gesnerus* (*loc. cit.*):

Quinque sumus fratres, sub eodem tempore nati,
 Bini sunt barbati, bini sine crine creati,
 Quintus habet barbam, sed tantum dimidiatam.

That light-hearted scholar E. A. Bowles, when expounding the relation of aestivation and phyllotaxy in his *My garden in summer*, p. 54 (1914), gives a version different from the four quoted above:

Quinque sumus fratres, unus barbatus et alter,
 Imberbesque duo, sum semiberbis ego.

This version is also quoted in Troll's *Praktische Einführung* 2: 13 (1957).

There is equal choice of English translations, almost all of them made in the nineteenth century. A version attributed to the now almost forgotten poet James Montgomery (1771-1851) renders it as follows:

Five brethren there are
Born at once of their mother,
Two bearded, two bare,
The fifth neither one nor the other
But to each of his brethren half brother.

The Rev. Kirby Trimmer (1804-87), author of the *Flora of Norfolk*, claimed in *Notes and Queries*, VI. 4: 74 (July 1881) the following version printed there in VI. 3: 466 (June 1881) as being of his composition:

Of us five brothers at the same time born
Two from our birthday ever beards have worn
On other two none ever has appeared
While the fifth brother wears but half a beard

Another, quoted by C. W. Bingham (*loc. cit.*: June 1881) from *Evening hours* 1: 208 (1871), runs as follows:

Five brothers all equal in age,
Two bearded and equally wise,
Two beardless and equally sage,
One bearded though one half in size.

Ellacombe (1905) has a different one:

Five brothers we, all in one moment reared;
Two of us bearded, two without a beard;
Our fifth on one cheek only wears the beard.

Another attributed by Bingham simply to "a learned Cambridge professor" and by A. W. Hill (*Henry Nicholson Ellacombe*, p. 299: 1919) to Prof. Edward Byles Cowell (1826-1903), professor of Sanskrit in the University of Cambridge, is as follows:

Five brethren of one birth are we
All in a little family,
Two have beards, and two have none
And only half a beard has one.

A German version, quoted in H. Balss, *Albertus Magnus als Biologe*, p. 98

(1947) from O. Warburg, *Die Pflanzenwelt* (1913-22), runs as follows:

Fünf Brüder sind's, zu gleicher Zeit geboren,
Doch zweien nur erwuchs ein voller Bart,
Zwei andern blieb die Wange unbehaart,
Dem fünften ist der Bart nur halbgeschoren.

Another, communicated to me by Prof. Wilhelm Troll, is:

Fünf Brüder in Bunde
Zwei davon sind bärtig
Zwei sind bartlos
Der fünfte hat den halben Bart bloss.

In his study of leaf-arrangement, published in 1754, Charles Bonnet (1726-93) pointed out that the leaves on the shoots of many plants were arranged spirally "en quinconces***de cinq en cinq." Under this he included, as pointed out by A. H. Church (*On the relation of phyllotaxis to mechanical laws*, p. 4: 1904),

the true $2/5$ spiral as we now understand it, in which a spiral makes two revolutions to insert five members, thus ultimately producing five vertical rows on the axis; and this arrangement he checked on sixty-one species of plants. The term *quincuncial*, thus defined, became limited to a special type of spiral phyllotaxis apart from its original signification.

Compression of a $2/5$ cycle of phyllotaxis to the same level gives a quincuncial aestivation such as that of the calyx of *Rosa*.

Thus the keen-witted medieval author of the riddle of the five brethren touched upon an interesting matter of floral organization.