Ajax

Monograph of Narcissus, subgenus Ajax
by H.W. Pugsley, B.A., F.L.S.
from Vol. LVIII Part 1 of the Journal
of the Royal Horticultural Society
February 1933

Roberta C. Watkins from J. Brooks. June, 1947.

Price (to Non-Fellows) 7s. 6d. February 1933

Vol. LVIII. Part 1.

THE

JOURNAL

OF THE

Royal Horticultural Society

EDITED BY

F. J. CHITTENDEN, F.L.S., V.M.H.

CONTENTS.

R.H.S. OFFICE: VINCENT SQUARE, S.W.1.
GARDEN: WISLEY, RIPLEY, SURREY.

Printed for the Royal Horticultural Society
BY
SPOTTISWOODE, BALLANTYNE & CO. LTD., NEW-STREET SQ., LONDON.

[Published at Stationers' Hall.]

A MONOGRAPH OF NARCISSUS, SUBGENUS AJAX.

By H. W. Pugsley, B.A., F.L.S.

More than thirty years ago I began to cultivate Narcissi in my small garden, and in 1915 I wrote an account of the Poeticus group, which was published as a Supplement to the Journal of Botany for that year. In this work not only were wild forms dealt with, but attention was drawn to the existence of various plants that had evidently been very long under cultivation but whose origin was obscure; and some of these were treated as provisional species. It is not clear even now just how far the arrangement then adopted is a natural one, for while wild Poet's Narcissi usually show a considerable range of floral variation, most of the old garden forms present a uniformity of flower that indicates an origin by bulb division from a small selected group of plants or even a single individual. And the omission to cite *exsiccata* in the taxonomic descriptions, though seemingly unfortunate, still appears to have been the only practical course, for the certain identification of dried specimens of Poet's Narcissi is impossible unless they are specially prepared and accompanied by particulars of the corona and the stamens.

In the Ajax group, which it is now attempted to revise, these difficulties are much less. There is not the same degree of floral variation among the wild plants of a single habitat, and it is not impossible to identify with some degree of confidence a large proportion of the specimens in herbaria. At the same time as wide an acquaintance as possible with the living plants, both wild and cultivated, is essential in this as in other groups of Petaloid Monocotyledons; and it is with this in view that I have continuously grown in the garden a large proportion of the available wild Ajax forms. With them, as with the Poetici, fully developed capsules and occasionally perfect seeds can be obtained from flowers kept in water when, as often happens, fruiting fails in the growing plants. The wild form that I know best is, of course, the common English Daffodil. To see this plant flowering in thousands, lighting up meadows and open woods while the trees are yet leafless, is one of those pleasures that we all love to recall, as did our forefathers centuries ago. Another Daffodil that I have met with in profusion is *Narcissus abscissus*, decking steep grassy slopes in the Pyrenees, and on one occasion I saw it, in great beauty, growing mixed with an equal abundance of the dark bronze *Fritillaria pyrenaica*. I have also collected in the Pyrenees *N. nobilis* and a beautiful bicoloured form of *N. macrolobus*. Another happy memory is that of *N.* '*pallidus praecox*' in the Eastern Pyrenees in clumps under the pine-trees among the Primroses and white Hepaticas. In

the Italian Lakes district, too, I have seen wild Daffodils, and among them a full yellow form, allied to *N. obvallaris*, which will be described as a new species.

The herbarium material of Ajax forms available for examination is not extensive. There is a fair collection at Kew, as well as at the Natural History Museum, South Kensington, which now possesses the plants of the late M. GADECEAU, who was interested in Daffodils and copiously annotated his specimens. The BAILEY and MELVILL collections at Manchester also contain many useful sheets, and Mr. LACAITA'S Herbarium includes a few valuable gatherings. A small number of early examples in the LINDLEY Herbarium at Cambridge and the FIELDING Herbarium at Oxford are of importance for the identification of the species of the early nineteenth-century botanists. Whatever specimens HAWORTH may have preserved are no longer to be found.

Daffodils of the Herbalists.

Like the Poet's Narcissi, Daffodils were known in variety in cultivation before the end of the sixteenth century. Very generally they were credited with a Spanish origin, and " Spain " in this sense probably included Portugal. It seems remarkable that so many different forms should have been collected at such an early date, when travel was so difficult ; and some of these early finds, like *N. cyclamineus*, have only recently been rediscovered, while others, as some of the Albiflori, have never since been traced. The former political connexion between Spain and the Netherlands, and the relations of the English Tudors with the Spanish Royal House, probably explain the explorations of Spain by foreigners at this period, of which the journey of CHARLES DE L'ECLUSE, or CLUSIUS, a native of Arras, which was then included in the Netherlands, is a well-known example. In the seventeenth century also there appear to have been very close connexions between England and Portugal. It must be remembered likewise that at this period Daffodils and other interesting and beautiful plants probably grew in relatively accessible localities from which they have since been extirpated either by collectors or the extension of local cultivation.

The earliest figure of a Daffodil in botanical literature is probably that of *Narcissus luteus* in BRUNFELS' Herbarum Eicones [vol. i. p. 129 (1530)], which shows a complete plant in bud, and a detached flower, erect with much expanded corona, that recalls *N. hispanicus*. In R. DODOENS' Histoire des Plantes, p. 150 (1557), which was translated from Low German into French by CLUSIUS, the name *Pseudo-Narcissus* (Coquelourde) appears for the first time, the plant being stated to grow about Bornhem, north of Brussels. Curiously the accompanying plate represents not a true Daffodil, but an *Incomparabilis* form resembling the modern ' Sir Watkin.' DODOENS' book was translated from French into English as A niewe Herball by HENRY LYTE in 1578, and on p. 214 there is an account of the ' Bastard

Narcissus' with the same figure. In 1570 LOBEL'S first work, Stirpium Adversaria Nova, was produced. It was printed in London and (p. 51) gives *Narcissus totus luteus montanus* Theophr., which is said to inhabit groves and woods of England and Belgium, and to grow near London. Six years later LOBEL'S Stirpium Historia was published at Antwerp, and here the common Daffodil, as well as a double-flowered form, were illustrated with good figures. Two varieties are also mentioned which point to *N. hispanicus* and *N. minor*, and are the earliest records of these plants. The year 1576 is likewise the date of CLUSIUS' Rariorum Stirpium per Hispaniam observatarum Historia, in which (p. 255) another tall Daffodil with deep yellow flowers is recorded as growing in Old Castile. DODOENS' Stirp. Hist. Pemptades Sex (1583) reverts to the name *Narcissus* (p. 227) and gives *N. luteus sylvestris* as a plant of Belgium, Germany, and Spain. There are two figures, one copied from LOBEL and a second, with a larger flower and more expanded corona, that resembles *N. hispanicus*. The Epitome of J. CAMERARIUS (1586) has an interesting figure of *N. totus luteus* (p. 953), in which not only an opened and a double flower but a developed capsule and seeds are accurately depicted. This plate may also be seen in MATTHIOLI'S Kreuterbuch (p. 442, as *N. IIII luteus*). The Kreuterbuch of HIERONYMUS TRAGUS (1587) shows (p. 271) a Daffodil with three flowers springing from a single bulb! In 1596 CASPAR BAUHIN'S Phytopinax was published, in which three Daffodils are enumerated, and the following year the Herball of JOHN GERARD, which mentions the double Spanish Daffodil, the English wild Daffodil, and the Spanish single Daffodil grown in London gardens. There is much interesting information about these plants in CLUSIUS' Rariorum Plantarum Historia (1601), although it includes no additional species. We learn that CLUSIUS knew the first kind, *Pseudo-Narcissus vulgaris*, in his youth, while a student at Louvain; the second, *P. major hispanicus*, which is the plant of Old Castile, he illustrates by DODOENS' second figure; and the third, *P. minor hispanicus latifolius*, he describes in some detail and with an original plate. A further species, *Pseudo-Narcissus flore albo*, was introduced by CLUSIUS in his Altera Appendix ad Historiam, attached to the Exoticorum Libri Decem (1605). It was well figured and fully described by CLUSIUS as a remarkable Daffodil which he received with Cyclamens and other plants from the Pyrenees. This is the earliest known record of a white Daffodil. A slightly later work, P. VALLET'S Jardin du Roi Henri IV (1608), is notable for its excellent figure of *N. cyclamineus*. In 1612 appeared J. T. DE BRY'S Florilegium Novum, which shows three yellow-flowered species, of which two are probably described for the first time. The relative figures of these plants are well produced.

A further advance in the knowledge of the Daffodils may be seen in EMANUEL SWEERT'S Florilegium, printed at Frankfort in 1612. Here two new Daffodils, evidently "clipt-trunks," are recognized in addition to the five kinds already definitely known. SWEERT'S

figures, though well printed, are crude and badly drawn, and occasionally indeterminable; for three of his species he uses the name *Pseudo-Narcissus*, for the remainder *Narcissus*. In 1613 a much more important work, BASIL BESLER'S Hortus Eystettensis, was published at Nuremberg. This ponderous tome gives an account of the plants cultivated in the Bishop's garden at Eichstadt in Bavaria, and furnishes short descriptions of every species, with synonyms, as well as life-size figures, which are generally well drawn and show complete plants. BESLER describes nine Daffodils, some of which he names *Pseudo-Narcissi*, and others *Narcissi*, without any obvious reason. SWEERT'S clipt-trunk forms are not included, but a bicolour is distinguished for the first time, and a further dwarf kind, which may be the *N. minimus* of modern gardeners. There are also two additional yellow Daffodils, one the *P. major hispanicus* of DE BRY, the other resembling *N. obvallaris*. Good figures of two of DE BRY'S plants may be found in C. VAN DE PASSE'S Hortus Floridus (1614).

In C. BAUHIN'S Pinax (1623), which brought together most of the accumulated botanical knowledge of that period but is without illustrations, eleven species of true Daffodils are included, all based on the plants of SWEERT or the Hortus Eystettensis. The species are: (1) *Narcissus subflavus tubo sexangulo*, (2) *N. flavus tubo rotundo*, (3) *N. albus calice flavo, moscari odore*, (4) *N. albus calice flavo alter*, (5) *N. sylvestris pallidus calice luteo*, (6) *N. major totus luteus calice praelongo*, (7) *N. totus luteus floris foliis reflexis*, (8) *N. parvus totus luteus*, (9) *N. albus oblongo calice*, (10) *N. albus fimbria lutea*, (11) *N. luteus repens*.

The next work that calls for notice is the Paradisus of JOHN PARKINSON (1629), which is of special interest as an account of the Daffodils then cultivated in England. The text gives some description of each form with its presumed place of origin, and PARKINSON mentions that several of his plants came from the Pyrenees. Most of the forms are figured, but the plates are poor. As a rule flowers only are shown, and these are badly drawn and printed. PARKINSON'S species number thirteen (excluding double-flowered forms) and differ materially from those of the Pinax. C. BAUHIN'S species marked 3, 4, 7, and 10 above, do not seem to have been known to PARKINSON, but he gives five fresh forms, viz. *Pseudo-Narcissus pyrenaeus variformis*, *P. pallidus praecox*, and three additional white-flowered Daffodils.

A second and enlarged edition of GERARD'S Herball was brought out in 1633 by THOMAS JOHNSON, but in this (p. 132) only the four species of CLUSIUS are distinguished and figured. The plates of the English Daffodil and of *P. albo flore* are both good. In the same year the anonymous Theatrum Florae appeared in Paris. This contains (Pl. 20) well drawn and engraved figures of six Daffodils, but does not include any forms that appear new. MATTHEW MERIAN'S Florilegium renovatum (1641) has two plates of Daffodils, the first (t. 15) showing three good figures reproduced from DE BRY'S work, and the second (t. 135) three much cruder but probably original figures, one of which perhaps represents the large white Daffodil

N. albescens. The Historia of JOHN BAUHIN, published at Briançon in 1651 though written many years earlier, gives (vol. ii. pp. 593–597) good accounts with figures of the three species of CLUSIUS' Historia under the names of *Bulbocodium vulgatius*, *B. hispanicum*, and *B. minus*, and of the *Pseudo-Narcissus albo flore* of CLUSIUS' Appendix under the original name. RAY [Historia, vol. ii. pp. 1130–1131 (1688)] mentions five species of Daffodils, four being those introduced by CLUSIUS and the fifth the plant now known as *N. bicolor*, which is for the first time unmistakably distinguished.

We now come to the Campi Elysii of O. RUDBECK (1701), the joint work of the father and son of that name, which is of particular interest owing to its authors being predecessors of LINNAEUS at Upsala. The book is a rare one, but LINNAEUS' own copy is preserved in the Linnean Society's library at Burlington House. The species enumerated by RUDBECK are without descriptions and are based on synonyms taken mainly from SWEERT, BESLER, or CLUSIUS. They are all figured in plates of unequal merit, some of the figures being annotated as drawn from plants in the Upsala garden. The number of species, all shown under the name of Narcissus, is eighteen, whereof two appear to be Corbularias. With one exception (*N. major luteus calice praelongo alter*) all of the plants seem to have been previously distinguished.

BARRELIER'S Plantae per Galliam, Hispaniam et Italiam observatae, published at Paris in 1714, includes figures of fourteen different Daffodils. The figures are well produced, but no information respecting the plants is furnished except their names, which are original. No fewer than eight of these Daffodils are white-flowered forms.

There is some interesting information in HILL'S Eden (1757) respecting this group of plants, with a good account of a form termed the "fringed Narcissus" (p. 184). Directions are given for raising Daffodils from seed, and it is mentioned that they normally require five years to bloom. There is evidence, however, nearly a century earlier that these plants were sometimes raised from seed.

Daffodils from the Time of Linnaeus.

LINNAEUS, as might be expected, paid no special attention to this group of plants, and since his time comparatively few botanists have studied them intensively. It is almost exclusively in Britain that they have at certain periods excited interest, and that more from a horticultural than a botanical standpoint. In Species Plantarum, p. 289 (1753), LINNAEUS admitted one species only, *N. Pseudo-Narcissus*, and his whole genus Narcissus contained but six species. In the second edition of the Species Plantarum (pp. 449 *seq.*) three additional Daffodils were included, viz. *N. bicolor*, *N. minor*, and *N. moschatus*, but it is clear from the confusion of the synonyms cited by LINNAEUS under two of them that his knowledge of the group was only very general. Fortunately the three later species are represented by determinable specimens in his herbarium.

In 1773 the two species confused by LINNAEUS in the synonymy of *N. bicolor* were separated by ANTOINE GOUAN, one of LINNAEUS' chief correspondents, in the Illustrationes Botanicae, where (p. 23) *N. bicolor* was more fully described and the yellow Spanish Daffodil distinguished as a new species, *N. hispanicus*. A second white-flowered species was re-established in 1797 as *N. cernuus* in ROTH'S Catalecta Botanica, p. 43, but ROTH'S name is still-born, being antedated by *N. cernuus* Salisbury of the preceding year, which is not an Ajax form.

Shortly before 1800 a revival of interest in Narcissi began in England, largely owing to their utility as garden plants. Four botanists especially worked on the genus—WILLIAM CURTIS, R. A. SALISBURY, A. H. HAWORTH, and Dean HERBERT. CURTIS gave an account of *N. minor* in 1787 as No. 6 of the Botanical Magazine, and described *N. major* as a new species as No. 51 in the following year; and later his successors in the Botanical Magazine similarly dealt with *N. moschatus* α (1806), *N. bicolor* (1809), *N. moschatus* δ (1810), and *N. major* β and γ (1810). All of these plants were described in some detail and well illustrated in coloured plates, and an attempt was made to identify them with the forms of PARKINSON and other pre-Linnean authors. The plates are of the greatest value for the identification of the species.

SALISBURY in his Prodromus Stirpium Chapel Allerton, pp. 220 *seq.* (1796), gives an entirely fresh account of the Daffodils, with seven species, all under new names. A short description of each species is furnished, with synonyms and some notes as to habitats. No white-flowered plant is included. In Trans. Hort. Soc., vol. i. pp. 343 *seq.* (1812), Salisbury converted the Daffodils into a distinct genus Ajax and increased the number of his species to ten. In this account, in which the specific epithets of four of his species of the Prodromus are arbitrarily changed, descriptions are omitted, but a much fuller pre-Linnean synonymy is inserted together with a number of interesting notes. Two of the additional species are white-flowered plants. There are good drawings of several Daffodils by SALISBURY in the Natural History Museum, South Kensington, which are most useful for purposes of identification, and it is evident that he possessed a wide knowledge of the group.

HAWORTH'S first paper on these plants appears in Trans. Linn. Soc., vol. v. p. 243 (1800), where six species of Daffodils, two of them new, are briefly described. The two new species are *N. albus* and *N. Sibthorpii*. Three years later, in Dissertationes, p. 179, HAWORTH described two more species, the white-flowered *N. tortuosus*, and *N. serratus*, an obscure form near *N. Pseudo-Narcissus*, of which no figure or synonym was ever furnished. In 1812, in Synopsis Plant. Succulent., Appendix, p. 326, he adopted SALISBURY'S genus Ajax, and described as new species *Ajax Telamon*, another obscure form never figured, *A. nobilis*, and *A. spurius*. A Narcissorum Revisio followed in 1819, in which fifteen species of Ajax appear, and a number

of varieties. The species are divided into two groups, viz. (1) Corollae tubo longiusculo, and (2) Corollae tubo abbreviato. The descriptions of these plants are very unequal, some being in considerable detail and accompanied by synonyms, while others consist of a few words only and synonyms are wanting. To these fifteen species two more were added by HAWORTH in 1830 in the Philosophical Magazine (p. 130). These were *A. lobularis*, the Truby (corrected to Tenby) 6-lobed Daffodil, of which a good account is given, and *A. cernuus* (Roth), of which HAWORTH stated that he had seen only the double form.

HAWORTH'S final work on the group, with the exception of some brief observations in the Philosophical Magazine for 1832, is contained in his Monograph of Narcissineae, published in 1831, a book of which few copies are now known. The Narcissi are here divided into a large number of genera, the name Ajax being retained for the Daffodils, excluding the clipt-trunk forms, which are separated as another genus Oileus. The genus Ajax is elaborately classified with four sections and twenty-four species, besides many varieties; and five species appear under Oileus. The descriptions are more uniform than in HAWORTH'S previous works, but are all too meagre and fall far below the best of his earlier accounts. Some of the additional species have been admitted on very slender grounds. But the Monograph, as a whole, clearly shows a better critical knowledge of the entire group Ajax than any earlier or later work. HAWORTH'S classification is as follows:

Genus *Ajax*.

* *Minores*. Flaviflores, tubo longiusculo.
! Corollae laciniis semiexpansis.
1. *A. minimus*. 2. *A. minor*. var. β ——. var. γ *angustus*. 3. *A. pumilus*.
!! Reflexiflores. Corollae laciniis reflexis.
4. *A. cyclamineus*.
** *Pallidiflores*. Corollae mediocres seu majusculae, tubo abbreviato, laciniis quam prioribus magis expansis albicantibus seu albis, corona alte lutea.
5. *A. nanus*. var. β ——. 6. *A. breviflos*. 7. *A. lorifolius*. var. β *anceps*. 8. *A. bicolor*.
*** *Albiflorae*. Corollis mediocribus seu majusculis, primo sulphureis demum albis.
9. *A. albicans*. 10. *A. tortuosus*. 11. *A. cernuus*. var. β ——. 12. *A. moschatus*.
**** *Lutei*. Floribus plerumque luteis, saepe sulphureis, rarissime stramineo-albicantibus, corona plus minusve saepe saturatiore.
! *Serricoronae*. Statura mediocri, corona minus profunde serrata seu crenata quam in sequentibus.
13. *A. Pseudo-Narcissus*. var. α *pallidus*. var. β *albis* (sic). var. γ *luteus*. var. δ *plenus*. var. ε *plenissimus*. 14. *A. serratus*. var. β *suavis*. var. γ *radians*. var. δ *praecox*. 15. *A. nobilis*.
!! *Lobato-coronae*. Mediocres, lobis integrioribus.
16. *A. lobularis*. var. β *amplicorona*. var. γ *plenus*. var. δ *scotica* (sic).
17. *A. rugilobus*. 18. *A. cambricus*. 19. *A. obvallaris*.
!!! *Incisilobae*. Majores et maximi, coronae lobis profundis propriis sex, semper plus minusve irregulariter lacinio-serratis seu crenatis.
20. *A. spurius*. 21. *A. Telamonius*. var. β *grandiplenus*. var. γ ——.
22. *A. propinquus*. 23. *A. maximus*. 24. *A. major*.

Genus *Oileus*.

1. *O. abscissus*. var. β ——. 2. *O. hexangularis*. 3. *O. minor*. 4. *O. albus*. 5. *O. pumilus*.

Dean HERBERT'S contribution to the taxonomic study of these plants is his account in the Amaryllidaceae, pp. 299 *seq.* (1837), where he rightly reduces the number of HAWORTH'S genera while maintaining Ajax for the Daffodils. The number of his species is nine, viz. *A. minor*, with six varieties; *A. Pseudo-Narcissus*, with four varieties; *A. bicolor*, with three varieties; *A. tubaeflorus*, with two varieties; *A. moschatus*, with four varieties; *A. luteus*, with four varieties; *A. abscissus*; *A. hexangularis*; and *A. Sabinianus*. The last of these appears to be an *Incomparabilis* hybrid. In a "Postcript" (p. 415) HERBERT changes his views respecting some of these plants and raises some of the varieties to species. It is evident from his account that his knowledge of the group was inferior to that of SALISBURY and HAWORTH. His method of describing is original and peculiar, and I have found his diagnoses difficult to understand and of comparatively little value. His reference (under *A. hexangularis*) to the absurdity of the existence of a plant like *N. cyclamineus* is almost too well known to be recalled.

There is a comprehensive account of these plants, based on HAWORTH'S Revisio, but under the generic name Narcissus, in ROEMER and SCHULTES' Systema Vegetabilium, ed. 16, vol. vii. (1830), and a later summary in ROEMER'S Synopses Monographicae, fasc. iv. *Ensatae* (1847), where much of the knowledge of the group to date is brought together. A similar compilation, but founded on HERBERT'S work, may be found in KUNTH'S Enumeratio Plantarum, vol. v. (1850).

Three contemporary descriptions in SWEET'S British Flower Garden, Ser. II, vol. ii. (1833), are worthy of mention owing to the beauty of the accompanying plates. They are *A. cernuus* (No. 101), *A. pumilus* (No. 143), and *A. albicans* (No. 145). The same volume contains equally good figures of *Narcissus recurvus* and *N. stellaris*. The well-known and much earlier Liliacées of REDOUTÉ has three plates of Daffodils, viz. *N. Pseudo-Narcissus* (vol. iii. No. 158), *N. candidissimus* (vol. iv. No. 188), and *N. minor* (vol. viii. No. 480). These plates, like all of REDOUTÉ'S, are beautifully produced, but the figures in each case are conventional rather than botanically accurate. An excellent French figure is that of *N. minor* in the third volume of the Herbier général de l'Amateur, by MORDANT DE LAUNAY (1819).

An interesting diagnostic character that had hitherto been overlooked was brought to notice in Bull. Soc. Bot. France, vol. vii. p. 308 (1860), by M. J. GAY, who discovered that the seed of a late-flowering Pyrenean Daffodil cultivated in France (*A. muticus*) lacked the vesicular appendage at the chalazal end which characterizes other species. There are seeds in which this feature can still be seen among GAY'S specimens at Kew.

In 1875 BURBIDGE and BAKER'S The Narcissus was published. The Daffodils in this work are all included in one species, *N. Pseudo-Narcissus* L., and the botanical account of them occupies just two pages. Four varieties are admitted, *major* L. Sp. Pl. p. 415 (*sic*),

minor, *bicolor*, and *moschatus*, with the same authority cited. The descriptions are of a very general character, but many of the species of HAWORTH and his contemporaries are referred to the four recognized varieties. The work is illustrated with a number of coloured plates, but the figures are roughly drawn and crudely tinted, and compare very unfavourably with many earlier illustrations.

The treatment of the group was considerably modified in BAKER'S Amaryllideae (1888). One species only (*N. Pseudo-Narcissus*) was still recognized, with a variety *Johnstoni* ; and six subspecies —*N. muticus* Gay, *N. cyclamineus*, *N. major* Curt., *N. minor* L., *N. bicolor* L., and *N. moschatus* L.—are appended. There is a copious synonymy, mainly post-Linnean.

The last revival in the cultivation of Daffodils, headed by PETER BARR, led to the production of an interesting list of forms in The Florist and Pomologist, p. 91 (1884). This list included a large number of plants which BARR had collected, chiefly in cultivation in Britain, and had identified with the species described by HAWORTH, SALISBURY, and HERBERT. In all thirty-eight plants are enumerated, arranged under eight species: *N. Pseudo-Narcissus*, *N. abscissus*, *N. cambricus*, *N. major*, *N. minor*, *N. bicolor*, *N. lorifolius*, and *N. moschatus*. It is of interest to note that two of these plants, marked by BARR as lost to cultivation, have since been rediscovered.

The third volume of ALEXIS JORDAN'S Icones ad Floram Europae, published in 1903, many years after the author's death, contains descriptions of thirteen species of Daffodils, twelve of them new. The descriptions are in detail and uniformly well written under the generic name Ajax, and the origin of each plant is given. There is a full-page plate of each species, showing at least one complete plant, and dissections of the flowers and fruits are added. These are perhaps the best illustrations of Daffodils in any botanical work. Three of the species are described from garden plants, nine are natives of various parts of France, and one is a native of Northern Spain. This last-named is *A. asturiensis*, the *N. minimus* of present-day English gardeners. The majority of the species, several of which closely resemble *N. Pseudo-Narcissus*, are " Jordanian " species, and most of them have been reduced to the rank of varieties in the present revision.

The arrangement of the Daffodils in the two leading Floras of Spain and France, the countries in which the plants are chiefly found, should perhaps be mentioned. In WILLKOMM and LANGE'S Flora Hispanica, vol. i. pp. 151 *seq.* (1861), Ajax is treated as a section of Narcissus, and the following species are admitted : *N. minor* L., with a variety *cuneiflorus* (Salisb.) ; *N. Pseudo-Narcissus* L., with a variety *bicolor* Gren. Godr. ; *N. major* Curt. ; *N. moschatus* L. ; and *N. tortuosus* Haw. It is probable from the description that the plant intended as *N. minor* is really *A. asturiensis* Jordan.

ROUY'S Flore de France, vol. xiii. pp. 28 *seq.* (1912), treats Ajax as a subgenus of Narcissus, and includes all the French forms under

one species, *N. Pseudo-Narcissus* L., which is divided into two subspecies, *N. silvestris* Lamk. and *N. moschatus* L. The first subspecies has a variety *serratus* (*N. serratus* Haw.), and four races: (1) *N. major* L. (*sic*), subdivided into α *hispanicus* (*N. hispanicus* Gouan) and β *maximus* (*A. maximus* Haw.); (2) *N. bicolor* L.; (3) *N. minor* L.; and (4) *N. candidissimus* Red. The second subspecies is represented by two races: (1) *N. muticus* Baker; and (2) *N. lorifolius* R. & Sch., with varieties β *anceps* Schultes and γ *discolor* (*N. bicolor* Lap.). The separation of *N. moschatus* from *N. candidissimus*, to cover two races *N. muticus* and *N. lorifolius*, is an unusual and apparently unnatural arrangement, and at once raises the question whether there is any evidence of a white-flowered Daffodil lacking the chalazal seed appendage. GAY seems to have known this peculiarity only in his *A. muticus*. ROUY makes no allusion to the species of JORDAN'S Icones.

Taxonomic and Morphological Characters.

In considering the classification of Daffodils the question that naturally first arises is the position of the group in relation to other Narcissi. The feature that immediately strikes every observer is the large and conspicuous corona, but an equally essential and perhaps really more important character lies in the arrangement of the stamens. These are uniseriate, while in other Narcissi they are biseriate, and they are inserted near the base of the perianth-tube, to which they are adnate for a very short distance, rarely exceeding 5 mm. The anthers are linear and stand erect round the style, than which they are always shorter; and the point of attachment to the filaments is not at the middle of the anthers, as in other Narcissi, but at a very short distance from one end, so that they become sub-basifixed instead of versatile. The unique flower of the Daffodil was observed at a very early date, and apparently led DODOENS [Hist. Plantes, p. 150 (1557)] to invent the designation *Pseudo-Narcissus*, a term that was consistently used by CLUSIUS, GERARD, and PARKINSON. In later times SALISBURY founded the genus Ajax for these plants, and he was followed by HAWORTH, HERBERT, and SWEET, and more recently by JORDAN. In BURBIDGE and BAKER'S Narcissus, where all the forms are united as a single species, *N. Pseudo-Narcissus* L., this is placed with the genera *Corbularia* Haw. and *Assaracus* Haw. to form a group *Magni-Coronati*. This is not only an extreme Benthamian method, but an unnatural one, for *Assaracus* (*N. calathinus*) is obviously more closely allied to *N. triandrus*, which is included in another group *Medio-Coronati*, than to either *N. Pseudo-Narcissus* or *N. Corbularia*. It has already been remarked that WILLKOMM and LANGE in the Flora Hispanica treat Ajax as a section of Narcissus, and that in ROUY'S Flore de France it appears as a subgenus. I am inclined to think that the distinguishing characters of Ajax are as important as those of some other genera of Petaloid Monocotyledons, but at the same time I suspect that some of these genera ought to be reduced,

and so, with my limited experience in dealing with genera, I take the middle course and follow ROUY in regarding the Daffodils as forming a subgenus Ajax of Narcissus.

The best attempt to subdivide the subgenus Ajax seems to be that of HAWORTH'S Monograph, which has been shown above. This requires some emendation. The genus Oileus certainly cannot stand, for its one undoubted member is a true Daffodil allied to *N. bicolor*. *N. cyclamineus* and *N. Johnstonii*, neither of which was actually known to HAWORTH, are widely different from all the other forms in their concolorous flowers and more or less reflexed perianth-segments, and therefore are readily separable as a distinct section. Of the remaining plants, forming a second and much larger section, HAWORTH'S *Minores* and *Albiflorae* are homogeneous groups when *N. cyclamineus* is transferred; and similarly his *Pallidiflores* with the removal of *N. nanus*. His last group, *Lutei*, comprises more varied species, and it seems best to restrict this name to the deep yellow-flowered forms only (*Lobato-coronae* and *Incisilobae* Haw.) and to divide the remaining species (*Serricoronae* Haw.) into *Vulgares* for *N. Pseudo-Narcissus* and kindred forms, and *Nobiles* for certain somewhat similar plants of taller growth with large and showy flowers, of which one only was known to HAWORTH.

The most difficult matter in this, as in many other genera, is to determine what forms should be regarded as of specific rank. HAWORTH sometimes made a new species of a flower that attracted his notice in the London Flower Market; JORDAN, meeting with a Daffodil in which he detected features that he had not previously observed, wrote a careful description of the entire plant and figured it under a new specific name. It is evident that such methods, if generally followed with sufficient assiduity, would result in an accumulation of species that would render taxonomy practically impossible. Resemblances must be considered as well as differences, and an attempt made to estimate the relative importance of different characters. The subgenus Ajax is clearly one of the very many polymorphic groups of plants. A number of its most distinct forms are old garden plants whose origin is not certain. It is known that Daffodils were raised from seed in the seventeenth century, but this was probably rarely practised, for the length of time that would necessarily elapse before the flowering of the seedlings would always act as a strong deterrent. Cross-pollination was not understood until the nineteenth century, so that it cannot be supposed that these old forms were artificially created hybrids. It thus seems much more likely that they were all originally wild plants imported into the garden than that they were garden hybrids that could only be accidental. Some of these old garden plants have been refound in a wild state, and it may be assumed with reason that others that are not known in natural habitats are of similar status.

Wild Narcissi are gregarious plants that often grow in enormous numbers, and it is well known that in nature species of different

generic sections, if growing in proximity, will occasionally produce hybrids. It is therefore probable that different forms of Ajax in like conditions will act similarly and perhaps more freely so. My experience here is too limited to be of much value, but I expect that different wild Daffodils only occasionally grow together. In the Pyrenees, however, *N. pallidus praecox* and *variformis* are said to be found in proximity, and I once saw three distinct Daffodils within a single mile above Luchon. When Ajax forms do grow intermingled, it is likely not only that they cross freely, but that the offspring again hybridize with one or both parents, so that a number of intermediate forms may be found and the whole community has the aspect of a variable form ranging from one parent to the other. Wild collected plants, I believe, occasionally have this aspect, and the Daffodils grown on the mound at Kew, which I think are largely imported wild plants, comprise a number of intermediate forms. It is further possible that homogeneous communities of wild plants showing intermediate features are really of hybrid origin.

In attempting to classify these plants, I have tried to distinguish forms whose main characters appear distinct and not intermediate, and to treat only such plants as species, bearing in mind at the same time the probabilities arising from their geographical distribution. In accordance with this treatment eight new species will be established in this paper, five forms bearing deep yellow flowers, one with straw-coloured and one with white flowers, and one a splendid bicoloured plant recently collected for Mr. LACAITA. It will no doubt be noticed that among the species admitted all are not equally distinct, and it is possible that some of them might well have been treated as subspecies or varieties. But to assess accurately the status of all the known forms would involve a much more extensive knowledge of the wild plants in their native habitats than is at present possible, and it is therefore thought best to give specific rank to all plants appearing to possess distinct and not intermediate characters of apparently more than varietal value.

Among Daffodils most of the organs of the plant are of some importance for furnishing taxonomic characters, and their salient features can now be noticed seriatim.

There is little in the bulb to furnish diagnostic features. The chief difference is in size, the smallest bulbs being those of *N. asturiensis* and the largest those of *N. bicolor*. Under cultivation bulbs frequently become abnormally large. The small bulbs and those of the pale-flowered species are normally whitish in colour, the others more or less brown. Some bulbs are said to be more globose than others, but this is not very obvious.

The foliage presents considerable differences. It is always channelled at the base, generally becoming flat above. In *N. minor* and some other small species the leaves are more or less spreading, but in most forms they are nearly erect or recurved only towards the apex. In *N. hispanicus* and some other forms they tend to become

spirally twisted. Their breadth varies from about 2 mm. in *N. asturiensis* to 20 mm. in *N. bicolor*. The leaf-apex, though always obtuse, is more or less attenuate except in *N. asturiensis* and the broad-leaved forms. Most species have more or less glaucous foliage, this feature being most marked in the *Albiflori*, but in *N. cyclamineus* the leaves are bright green.

The scape is compressed and ancipitous except in *N. cyclamineus* and *N. asturiensis*, where it is nearly terete. The degree of compression varies considerably in different species. In some forms the scape is almost smooth, while in others, as *N. pallidiflorus*, it is ribbed or coarsely striate.

The one-valved spathe is normally membranous, but in *N. asturiensis* and some other species it is sometimes sub-herbaceous. "Spatha virens" is given by LINNAEUS as a character of *N. minor*. There are curious forms of *N. Pseudo-Narcissus* in which the margins of the membranous spathe are green and fully herbaceous; and this state may occur in other species.

The pedicel is one of the most important organs for the determination of species, both in its curvature and its length. While in the bud stage within the spathe it is always nearly erect upon the scape. As the flower opens it changes its direction and assumes a characteristic position in different species. Sometimes it becomes curved only at the apex, so that the flower is suberect, as in *N. hispanicus*; sometimes it is wholly and strongly arcuate-recurved with the flower drooping or inverted, as in *N. alpestris*; and sometimes without a regular curvature it is abruptly deflexed, as in *N. pallidiflorus*. After flowering and as the fruit develops, the pedicel usually resumes a more or less erect position. It may be as little as 3 mm. in length in *N. Pseudo-Narcissus*, and may exceed 90 mm. in *N. longispathus*.

The flower naturally affords some of the principal criteria. Its size is most variable, the length from the base of the perianth-tube to the edge of the corona ranging from 20 mm. in *N. asturiensis* to 80 mm. in *N. leonensis*. While absolutely self-coloured in the section *Cyclaminopsis*, in *Pseudo-Narcissus* it is more or less bicoloured (occasionally very obscurely so) except in the white *N. alpestris*. The proportionate length of the perianth-tube to the corona is an important feature. The tube is sometimes, as in *N. minor*, nearly as long as the corona; in the *Bicolores* it is about a quarter as long, and in *N. cyclamineus* even less. The shape, direction, and curvature of the perianth-segments are also characteristic, but in weak or ill-grown plants these features are obscured, the segments in all species tending to become narrow and straight. The form of the corona, its marginal expansion or reflexion, and its lobing, toothing, or undulation, are also salient features in distinguishing species. Scent is doubtless another characteristic, but it appears to be at times of a rather transient nature.

Specific characters may be seen in the stamens, especially in the extent to which the filaments are adnate to the perianth-tube. In *N. asturiensis* and *N. bicolor* the filaments are free almost to the base;

in *N. leonensis* they are adnate for about 7 mm. The anthers and pollen are usually sulphur-coloured, but in some of the *Albiflori* they are of a deeper yellow, which contrasts sharply with the whitish flowers.

The style always exceeds the stamens in length and falls short of the corona. It seems rarely to afford any clear diagnostic characters. The stigma varies somewhat in lobing, being generally more deeply 3-cleft in the *Albiflori* than in the other forms.

The capsule (figs. 3, 4, 5) varies greatly in shape. With each cultivated form it seems to be nearly uniform, but among wild plants of *N. Pseudo-Narcissus* a considerable diversity may be seen, the commonest form being trigonous-obovoid, shading into globose or oblong-ellipsoid. The fruits of the *Minores* tend to be oval and nearly terete ; the *Lutei* generally possess large, oblong, or oblong-obovate, more or less trigonous fruits ; the *Albiflori* have more ellipsoid, occasionally quite narrow capsules ; in *N. bicolor* the fruit is nearly terete and strongly furrowed. The developed fruit of the common Daffodil is often wrinkled or rugose instead of smooth—a peculiarity, noted by HAWORTH and HERBERT, that has been observed only in one other species.

The chief diagnostic feature to be found in the seed is the presence or absence of the vesicular chalazal appendage first noticed by GAY. In the case of some species it has not been practicable to obtain ripe seeds to determine this feature.

The cytology of numerous forms of Daffodils has lately been investigated, and the chromosome numbers are given in the descriptions of the species that are known to have been tested.

A feature that must be mentioned, albeit of little taxonomic importance, is the frequent production of double flowers in some species. A double Daffodil was figured by LOBEL [Stirp. Hist., p. 61 (1576)], and ten years later by CAMERARIUS (Epitome, p. 953) ; and GERARD (Herball, p. 115) states that the double Spanish form was received here from France. CLUSIUS (Rar. Plant. Hist., vol. ii. p. 164) notes that the double Daffodil was grown in the Netherlands. A little later several of these double flowers were cultivated in England, for PARKINSON (Paradisus, p. 102) enumerates no fewer than six of them. LINNAEUS in Sp. Plant., ed. 2, p. 414, shows two double varieties under *N. Pseudo-Narcissus*, viz. β *N. sylvestris multiplex, calice carens* Bauh. Pin. 54, and γ *N. luteus sylvestris, duplici f. triplici tubo aureo* Bauh. Pin. 54 ; and the species is represented in his herbarium by a double flower apparently referable to var. β. At a later date HAWORTH was interested in these double-flowering forms, of which six are given in his Monograph. In 1900 eight forms were grown by Messrs. BARR, and some of these are still obtainable.

With the exception of the double Spanish form mentioned by GERARD and presumably that figured by LOBEL, the double-flowered Daffodils seem to have been relatively scarce plants that were much prized by gardeners. The most widely spread species, *N. Pseudo-*

Narcissus, rarely produces double flowers, and the phenomenon of doubling appears chiefly to characterize the species of the series *Lutei*. The common double Daffodil of English gardens probably belongs to this group, but, curiously enough, its identity has never been satisfactorily established. HAWORTH at different dates referred it to *N. Telamonius*, *N. major*, and *N. lobularis*. Near Tenby *N. obvallaris* at the present day shows a strong tendency to doubling; and about Lugano the single yellow Daffodil of the hilly meadows is very much scarcer than a double-flowered plant that is probably only a form of it. In Italy generally double flowers of the deep yellow forms are said to be very frequent. On the other hand, double flowers appear to be rare in Spain, where the plants are most abundant; and the prevalence of double flowers in any district may perhaps indicate that the plant is not a true native but an introduction or relic of former cultivation.

Daffodils also exhibit differences less of a morphological than a physiological nature. Most of them are very susceptible to soil and other conditions of growth. It is well known that the common Lent Lily dies out in most English gardens. In the London clay of my small plot it always disappears forthwith. I find it impossible, too, to keep any species of the *Lutei* group or their derivatives, either in the border or in grass. On the other hand, the *Bicolor* forms flourish exceedingly. The *Albiflori* also die out with me, except the modern hybrid 'Madame de Graaf,' which is probably crossed with a *Bicolor*. In grass *N.* '*pallidus praecox*' (both *N. pallidiflorus* v. *intermedius* and *N. macrolobus* v. *pallescens*) persists and always flowers, but it never increases by bulb division. More typical forms of *N. macrolobus* brought from the Pyrenees in 1925 seem to behave very similarly, as do also forms of *N. nobilis*. *N. Gayi* increases quickly in my grass by bulb division but flowers very sparingly. As with garden forms so with wild Daffodils some species probably increase much more readily than others by bulb division. In Britain *N. Pseudo-Narcissus* spreads rapidly in this way, and this habit may have been induced by the constant gathering of the flowers over a long period, so that the plants have rarely been able to develop seeds. In most cases, probably, wild Daffodils seed quite freely.

Distribution of the Group.

The geographical range of the subgenus Ajax extends from the Iberian Peninsula, which is clearly its headquarters, over the whole of France to England, Belgium, Germany west of the Rhine, Switzerland, Tyrol, and Italy. Beyond these limits it is probable that only naturalized plants occur. The status of some Italian plants is uncertain, and, from the prevalence of double flowers in that country, it may be inferred that they are perhaps relics of ancient cultivation. Of the 27 species admitted in this paper, 12 are confined as native plants to Spain and Portugal, 1 to France, 5 to France and Spain,

1 to Italy, and 1 (*N. Pseudo-Narcissus*) is found throughout the range of the group. The remaining 7 are of unknown or doubtful origin.

It is evident that it is chiefly in Spain that the unlocated species must be sought, and it is likely that eventually not only these but other at present unknown forms will be discovered. Spain is an extensive country, almost entirely mountainous, where travel away from the beaten tracks is difficult and uncomfortable even in these days. BARR traversed the northern range of mountains and Northern Portugal, and made some interesting discoveries, to which Frère SENNEN and a few others have contributed some additions. But so far as Daffodils—and indeed some other critical groups of plants—are concerned, Spain is still very largely an unexplored country, where different forms may be found from the Pyrenees and Galicia to the Sierra Nevada in the extreme south. Fragmentary examples of some doubtful forms have been received this year (1932) in the Herbarium of the British Museum from the Sierra de la Nieve in Andalusia.

From the abundance of wild Daffodils in the north of the Iberian Peninsula, their occurrence as native plants in Southern Ireland would not be surprising, but the best Irish botanists agree that no truly wild Daffodils exist in their country. It curiously happens, however, that a number of forms not known elsewhere were discovered by BARR and others in old Irish gardens in the latter part of the last century. Their origin is quite unknown, and it can only be assumed that they were introduced from Spain through the early herbalists, unless some new facts as to the possible nativity of some of them can be adduced.

The majority of the Daffodils are gregarious plants which inhabit bare slopes or grassy, park-like land about the woods of hilly or mountainous districts. In Britain *N. Pseudo-Narcissus* is frequently a true woodland plant. Occasionally Daffodils grow in swampy ground, and on one occasion in the Pyrenees I met with plants in such wet soil that they could be drawn out with the roots almost intact. In Spain and Portugal, as well as in the Pyrenees, they ascend to about 7,000 feet altitude, and the small species of the series *Minores*, which are apparently confined to more open ground, perhaps reach even greater heights.

In the Portuguese lowlands flowering begins in January or February, and on the mountains it continues till June, although in our gardens the latest-blooming species are over early in May. While many forms appear to be very regular in their time of flowering, others differ widely under different conditions.

NOTABILIA.

In the following taxonomic account a separate pre-Linnean synonymy has been inserted, as in "*Narcissus Poeticus* and its allies," owing to the importance in this group of the work of early writers. Some early figures are also shown among the Icones, and it has fortunately been found possible to cite *Exsiccata* almost throughout. Italicized salient contrasting characters are uniformly given in the succeeding descriptions, which have been drawn up from living

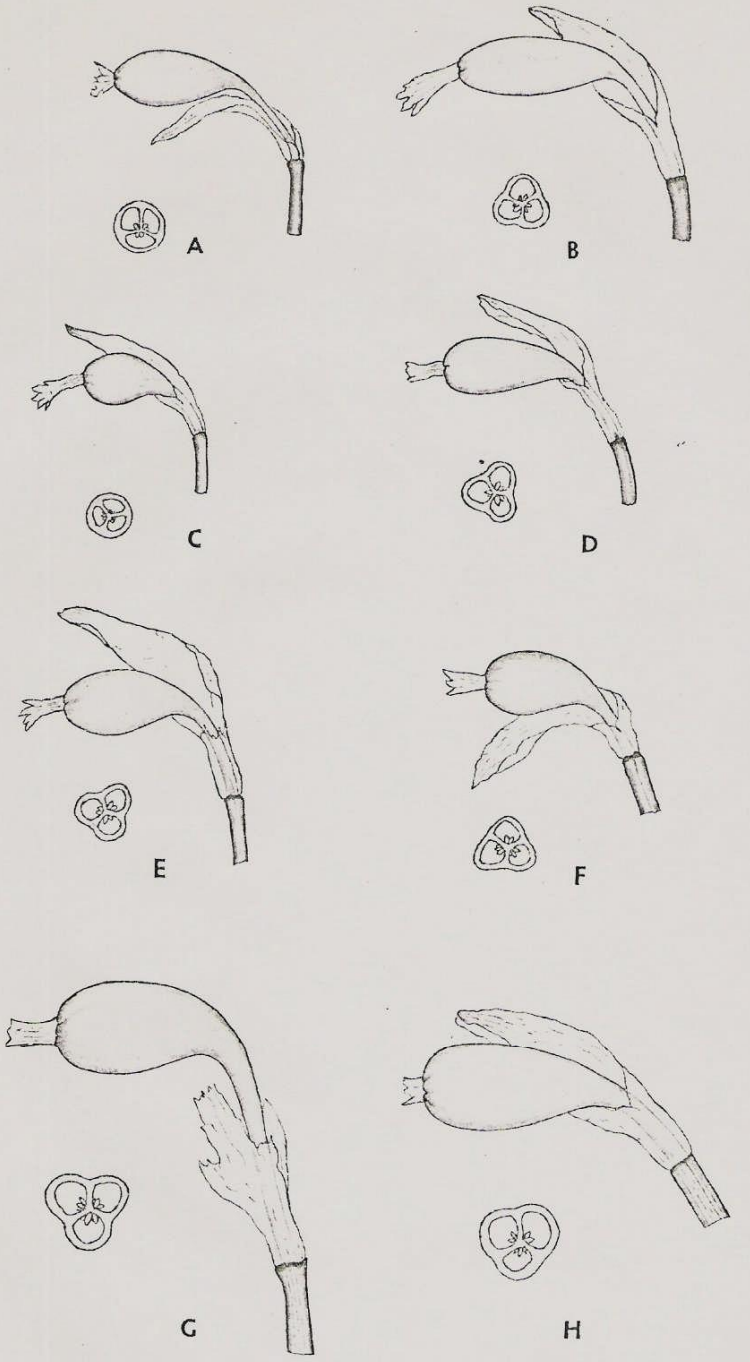

FIG. 3.—FRUITS OF NARCISSI WITH TRANSVERSE SECTIONS (nat. size).

A, N. cyclamineus. B, N. Johnstonii. C, N. asturiensis. D, N. minor. E, N. pumilus. F, N. nanus. G, N. hispanicus. H, N. obvallaris.

[*To face p.* 32.

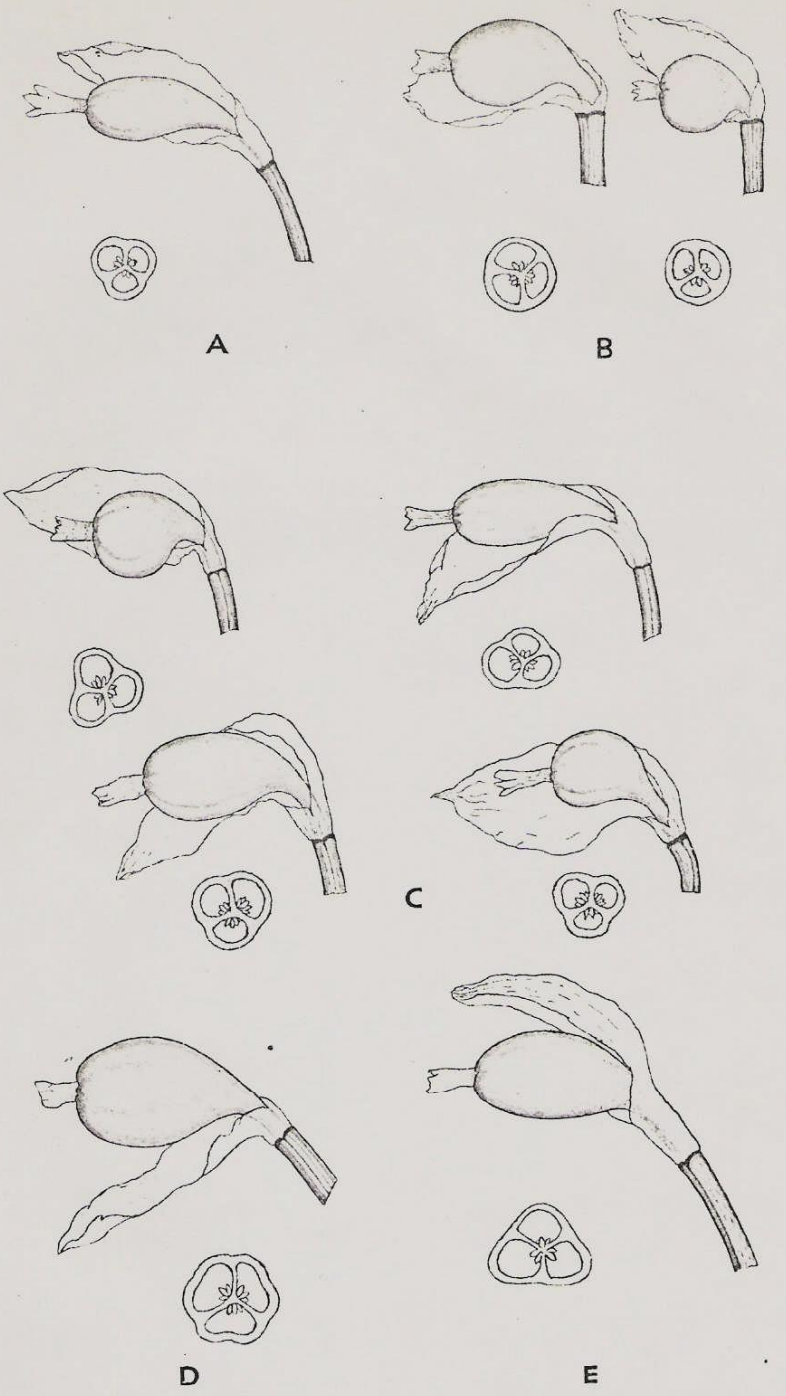

FIG. 4.—FRUITS OF NARCISSI WITH TRANSVERSE SECTIONS (nat. size).
A, N. pisanus. B, N. pallidiflorus and var. intermedius. C, N. Pseudo-Narcissus (4).
D, N. macrolobus var. pallescens. E, N. Gayi f. 'princeps.'

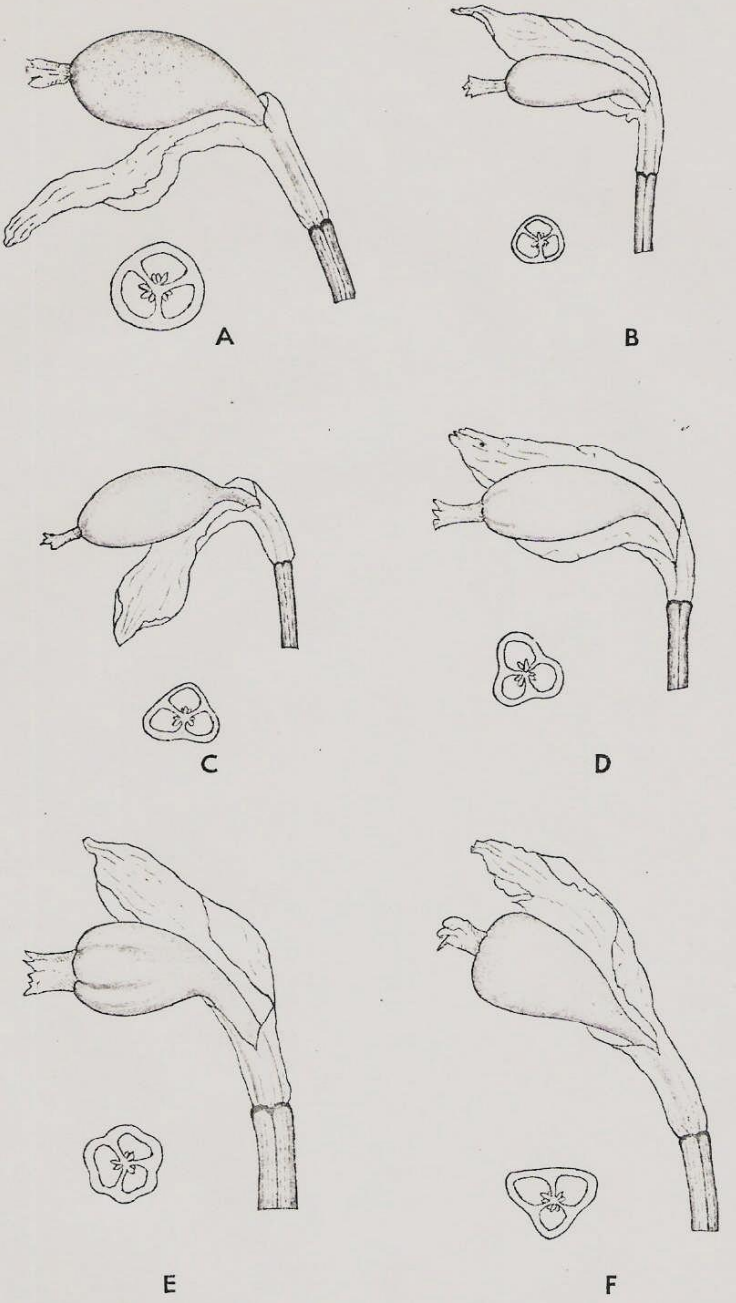

FIG. 5.—FRUITS OF NARCISSI WITH TRANSVERSE SECTIONS (nat. size).
A, N. nobilis. B, N. moschatus. C, N. alpestris. D, N. tortuosus. E, N. bicolor f. 'Empress.' F, N. abscissus var. graciliflorus.

plants wherever possible. The forms that I have not seen or seen only in a dried state are distinguished respectively by n.v. (non vidi) or v.s. (vidi siccum). The Latin diagnoses of new groups are given as footnotes. The length of the corolla and other measurements appearing in the descriptions are those of dried specimens, and the term " bicoloured " is used only when a deep yellow corona forms a strong contrast to a white or very pale perianth. The pedicel is described as at the time of flowering ; in fruit it sometimes lengthens.

It is desirable, in collecting these plants, to note the curvature or direction of the pedicel at the time of flowering, the colour of the flowers, the form and curvature of the perianth-segments and of the corona, and if possible the shape of the fruit, these features becoming readily obscured in drying.

I am indebted to Miss E. ARMITAGE, to Mr. J. E. ARNETT, and to Mr. P. R. BARR for supplying a number of useful living specimens; to Dr. E. J. COLLINS and Mr. J. PHILP, of the John Innes Horticultural Institute, Merton, for cytological information that has not yet been published ; and to the authorities of the Linnean Society of London, the Royal Botanic Gardens, Kew, the Royal Horticultural Society, the Lindley Herbarium at Cambridge, and the Fielding Herbarium at Oxford, for facilities for preparing the accompanying plates.

NARCISSUS *Linn. Sp. Plant.* 289 (1753).

Subgenus AJAX *Spach.*

Narcissus subgenus *Ajax* Spach, Hist. Nat. Vég. Phan. xii, 432 (1846) ; Rouy, Fl. France, xiii, 28 (1912) ; *Ajax* Salisb. in Trans. Hort. Soc. i, 343 (1812) ; Haworth, Narciss. Revis. 111 (1819) ; Mon. Narcissin. 1 (1831) ; Herbert, Amaryll. 299 (1837) ; Jordan, Icones Fl. Europ. iii, 1 (1903) ; *Narcissus* Sect. *Ajax* Willkomm and Lange, Fl. Hisp. i, 151 (1861) ; *Narcissus* Sect. *Magnicoronati* Baker, Amaryll. 2 (1888), ex parte.

Leaves more or less flat, synanthous. Spathe 1-flowered. Perianth-tube turbinate or obconic, usually shorter than the large, campanulate or tubular corona ; perianth-segments lanceolate to ovate, subequalling the corona in length. Stamens straight, equal, uniseriate, inserted near the base of the perianth-tube ; anthers linear, sub-basifixed, surrounding the style. Style straight, longer than the stamens but shorter than the corona.

CONSPECTUS OF SPECIES.

SECTION I. CYCLAMINOPSIS.

Flowers yellow, concolorous ; perianth-segments reflexed or rarely spreading.

1. *N. cyclamineus.*—Flowers small, deep yellow, with very short perianth-tube and rigidly reflexed segments. (p. 36)
2. *N. Johnstonii.*—Flowers of moderate size, pale lemon-yellow, with long perianth-tube and loosely reflexed (rarely spreading) segments. (p. 37)

SECTION II. PSEUDO-NARCISSUS.

Flowers yellow with corona of more or less deeper colour than perianth, bicoloured, or rarely white ; perianth-segments not reflexed.

Series I. *Minores.*

Flowers small or very small, yellow or bicoloured, with flowering pedicel not deflexed or very short. Capsule more or less oblong, nearly terete or slightly trigonous.

*Corona inflated below and contracted about the middle. Filaments inserted close to base of perianth-tube (always?).

3. *N. asturiensis.*—Plant very dwarf. Flowers very small, yellow and nearly concolorous, with long perianth-tube. (p. 40)
4. *N. Lagoi.*—Plant tall. Flowers very small, yellow, with very long perianth-tube. (p. 42)

**Corona straight from the middle downwards. Filaments inserted 3–5 mm. above base of perianth-tube.

5. *N. minor.*—Plant dwarf, with narrow, erect-spreading foliage. Flowers small, yellow, with long perianth-tube and rather narrow segments; corona slightly spreading above. (p. 43)
6. *N. pumilus.*—Plant larger, with broader foliage. Flowers rather small, deep yellow, with long perianth-tube and narrow, distant segments; corona spreading above and distinctly lobed. (p. 45)
7. *N. nanus.*—Plant erect, with broad foliage. Flowers small, yellow, with rather long perianth-tube and ovate, imbricated segments; corona scarcely spreading above, obscurely lobed. (p. 48)
8. *N. parviflorus.*—Plant erect, with narrow foliage. Flowers small, bicoloured, with rather short perianth-tube and scarcely imbricated segments; corona not spreading above, very obscurely crenate-lobate. (p. 49)

Series II. *Lutei.*

Flowers small to large, deep yellow (paler in *N. pisanus*), with flowering pedicel not deflexed and rarely very short. Capsule more or less oblong-obovoid and trigonous.

*Plant tall. Pedicel suberect.

9. *N. hispanicus.*—Leaves usually twisted. Pedicel not very long. Flowers large, with twisted perianth-segments. (p. 50)
10. *N. longispathus.*—Leaves flat. Pedicel very long. Flowers rather small, with perianth-segments scarcely twisted. (p. 54)

**Plant less tall, with flat leaves. Pedicel shorter. Flowers usually of moderate size.

11. *N. obvallaris.*—Plant robust. Flowers (rarely large) with broad and generally short perianth-tube and broad, imbricated segments; corona broad, spreading above, variously lobed. (p. 55)
12. *N. pisanus.*—Plant rather slender. Flowers with medium perianth-tube and slightly imbricated segments; corona rather broad, spreading above, regularly lobed. (p. 59)
13. *N. confusus.*—Plant taller and robust. Flowers with rather broad perianth-tube and more or less twisted segments; corona rather broad, obscurely spreading and lobed. (p. 59)

***Plant slender or dwarf. Flowers with long perianth-tube and subtruncate corona.

14. *N. portensis*.—Plant slender, with short leaves. Pedicel rather short. Flowers of moderate size, with short, narrow perianth-segments. (p. 61)

15. *N. nevadensis*.—Plant dwarf. Pedicel very long. Flowers small, with relatively larger perianth-segments. (p. 62)

Series III. *Vulgares*.

Flowers of moderate size, yellow, straw-coloured, or bicoloured, with very short, deflexed flowering pedicel. Capsule broadly oval, subglobose or obovoid.

16. *N. Pseudo-Narcissus*.—Flowers yellow or more or less bicoloured, with long perianth-tube and corona rarely much expanded or distinctly lobed. Capsule more or less roundly trigonous and often rugose. (p. 63)

17. *N. pallidiflorus*.—Flowers straw-coloured, with long perianth-tube and corona generally expanded and distinctly lobed. Capsule subterete, not rugose. (p. 69)

18. *N. macrolobus*.—Flowers bicoloured or straw-coloured, with shorter perianth-tube and more or less broad, expanded and distinctly lobed corona. Capsule scarcely trigonous, not rugose. (p. 71)

Series IV. *Nobiles*.

Flowers large, yellow or bicoloured, with flowering pedicel neither deflexed nor very short. Capsule more or less ellipsoid.

19. *N. Gayi*.—Flowers large, yellow, with short perianth-tube, narrow segments and long corona. Capsule trigonous. (p. 72)

20. *N. nobilis*.—Flowers more or less large, yellow, with rather long perianth-tube, often broader segments and expanded corona. Capsule nearly terete. (p. 74)

21. *N. leonensis*.—Flowers very large, bicoloured, with rather short perianth-tube, long segments and expanded corona. Capsule apparently nearly terete. (p. 75)

Series V. *Albiflori*.

Flowers rather small to rather large, pale sulphur or white, with rather short perianth-tube and more or less arcuate-recurved flowering pedicel. Capsule more or less ellipsoid.

22. *N. moschatus*.—Flowers of moderate size, drooping, sulphur-white, with slightly dilated and lobed corona. Capsule narrow, nearly terete. (p. 76)

23. *N. alpestris*.—Flowers rather small, drooping, white, with straight, subtruncate corona. Capsule less narrow, distinctly trigonous. (p. 79)

24. *N. tortuosus*.—Flowers rather large, less drooping, sulphur-white, with corona somewhat expanded into shallow lobes. Capsule oblong, bluntly trigonous. (p. 81)

25. *N. albescens.*—Flowers rather large, horizontal, pale sulphur (fading to nearly white), with corona expanded and lobed. Capsule subterete. (p. 82)

Series VI. *Bicolores.*

Flowers of moderate size or rather large, bicoloured or yellow, with short perianth-tube and nearly erect flowering pedicel. Capsule obovoid, trigonous or not. Chalazal end of seed not appendiculate.

26. *N. bicolor.*—Flowers rather large, usually bicoloured, with broad perianth-segments and somewhat expanded and obscurely lobed corona. Filaments inserted close to base of perianth-tube. Capsule nearly terete, furrowed. (p. 84)

27. *N. abscissus.*—Flowers more or less large, yellow, with moderate perianth-segments and cylindrical, obscurely lobed corona. Filaments inserted 2–4 mm. above base of perianth-tube. Capsule trigonous. (p. 88)

SECTION I. CYCLAMINOPSIS.*

Flowers yellow, concolorous; perianth-segments reflexed or rarely spreading.

1. NARCISSUS CYCLAMINEUS DC. (figs. 3A, 6, 7). R.H.S. adds as Baker

Narcissus cyclamineus DC. in Redouté, Liliac. viii, No. 486 (1816); Baker in Bot. Mag. No. 6950 (1887); Willk. & Lge. Fl. Hisp. Suppl. 38 (1893); Merino, Fl. Galicia, iii, 116 (1909); Coutinho, Fl. Portugal, 141 (1913); *Ajax cyclamineus* Haw. Mon. 2 (1831); *N. Pseudo-Narcissus* subsp. *N. cyclamineus* Baker, Amaryll. 4 (1888).

N. hispanicus minor luteus amplo calice foliis reflexis Vallet, Jardin du Roi Henri IV, pl. 20 (1608); Theatrum Florae, pl. 20 (1633).

Icones. Vallet *l.c.*; Theatrum Fl. *l.c.*; Bot. Mag. t. 6950; Gard. Chron. Ser. III, i, f. 46, and Ser. III, xxxix, f. 119; Garden, lix, p. 352.

Exsicc. Burbidge, Bot. Gard. Dublin, 1887, in Hb. Kew.; Fl. Lusit. Exsicc. No. 237, Schmitz, Valango, 1885; A. W. Tait, Oporto, 1886, in Hb. Kew.

Bulb small, ovoid, about 16 mm. long and 12 mm. broad, with whitish scales. *Leaves* ascending, 15–25 cm. long, *bright green, thick, channelled above* and broadly keeled below, 4–5 mm. broad, obtuse. Scape 15–20 (rarely –30) cm. long, erect, nearly terete, obscurely 2-edged, finely striate. Pedicel rather slender, not compressed, nearly straight below and strongly recurved above, as long or longer than the capsule (15–25 mm.). *Flower small, almost inverted,* 40–45 mm. long from margin of corona to apex of reflexed perianth-segments, *uniform deep yellow,* not scented; *perianth-tube remarkably short* and broad, only 2–3 mm. long; *perianth-segments* linear-oblong, subacute, about 20 mm. long, *rigidly reflexed upwards over the capsule*; *corona* oblong, *long and narrow,* equalling the perianth-segments, very slightly dilated at the margin, which is usually irregularly serrate-crenate, but occasionally only obscurely crenate or sub-entire. Filaments inserted close to base of perianth-tube. Style slightly exceeding stamens, with rather large stigma. Capsule 12–18 mm. long, narrowly obovoid, obscurely trigonous, not furrowed. Chromosome number 14 (Collins).

N. cyclamineus is perhaps the most distinct plant of the Ajax group. Its narrow, thick, bright green leaves are unlike those of any other species, and its flower is notable for its extremely short perianth-tube and rigidly reflexed segments. It is one of the earliest flowering species.

* Flores lutei, concolores. Perianthii segmenta reflexa vel raro patentia.

This local plant, which is only known to occur near Oporto in Portugal, and in Galicia (Coruña and Pontevedra), is remarkable for its rediscovery, in 1885, by Messrs. TAIT and SCHMITZ after being lost to cultivation for about 250 years. It is so well figured by VALLET and in the Theatrum Florae that its identity cannot be questioned. The *N. totus luteus oblongo calice et reflexis foliis* of BESLER'S Hortus Eystettensis, Ord. 3, f. 13 (1613), which is taken up by C. BAUHIN in the Pinax, p. 53 (1623), appears from the figure to be a different plant, in which the perianth-segments are not really reflexed but ascending. The plate recalls *N. abscissus*. This plant, represented by a similar figure, is also shown in RUDBECK'S Campi Elysii, p. 72, f. 10 (1701). Another old figure that strongly resembles *N. cyclamineus* appears on Plate 65 (fig. 5) of SWEERT'S Florilegium as *Pseudo-Narcissus flor. alb. tuba oblonga fimbrys luteis*.

The species is cited as of DE CANDOLLE, as his account (*l.c.*) is based on the plant of the Theatrum Florae, of whose identity there can be no doubt.

FIG. 7.—NARCISSUS CYCLAMINEUS.
From P. Vallet's *Jardin du Roi Henri IV* (1608).

2. NARCISSUS JOHNSTONII sp. nov. (fig. 3B).

N. Pseudo-Narcissus var. *Johnstoni* Baker in Gard. Chron. N.S. xxv, 590 (1886); Henriques in Bot. Soc. Brot. v, 170 (1887); Baker in Bot. Mag. No. 7012 (1888); Amaryll. 3 (1888); N. 'Queen of Spain' hort. recent.

N. falsus tubo sexangulari flavus non descriptus Sweert, Floril. i, Pl. 21, 4 (1612) ?

N. subflavus tubo sexangulo C. Bauhin, Pinax, 52 (1623) ?; Rudbeck, Camp. Elys. 68, f. 3 (1701) ?

Icones. Bot. Mag. t. 7012; Garden, xxxiv, p. 55; Gard. Chron. Ser. III, i, f. 60.

Exsicc. Burbidge, cult. Dublin, 1888, in Hb. Kew.; Gadeceau, cult., 1893 and 1907, in Hb. Mus. Brit.; Barr, Galicia, in Hb. Kew.; Pugsley, Nos. 466 and 466A.

Bulb rather small, subglobose, 25–30 mm. long, with pale brown scales. *Leaves* erect, 20–30 cm. long, *slightly glaucous*, somewhat channelled and obscurely keeled, 7–12 mm. broad, obtuse and attenuate above. Scape erect, scarcely equalling leaves in length, slender, slightly compressed, bluntly 2-edged, very faintly striate. Spathe very rarely 2-flowered. Pedicel slender, sub-erect but curved at the apex, 15–25 mm. long. *Flower of moderate size, horizontal or drooping*, 40–45 mm. long (excluding ovary), of a uniform *pale lemon yellow*,

scentless; *perianth-tube* 16–20 mm. long, more *narrowly funnel-shaped* than in the other species of Ajax; *perianth-segments* narrowly oblong or lanceolate, scarcely imbricated, acute or mucronulate, *spreading-reflexed*, irregularly undulate, subequalling or exceeding the corona; *corona straight*, gradually a little dilated from the base upwards, 15–20 mm. in diameter at its apex, generally with an erect, nearly entire or very obscurely crenate-lobate and slightly plicate margin (more rarely the corona is relatively shorter and broader, with a slightly spreading and more distinctly crenate margin). Filaments inserted alternately about 4 mm. and 6 mm. above base of perianth-tube. Anthers without dark apical spot. Style exceeding stamens by about 10 mm., but shorter than the corona. Capsule about 22 mm. long, narrowly oblong-ellipsoid or fusiform, obtusely trigonous with three shallow furrows. Chromosome number 21 (Philp).

β. *mirabilis* var. nov.* (fig. 8).

Exsicc. Pugsley No. 485.

Plant (in specimens seen) dwarfer than type, 10–20 cm. high. Leaves 8 mm. broad. Scape smooth, not striate. Flowers 40 mm. long to margin of corona, 45 mm. to tip of perianth. Perianth-tube 20 mm. long; *perianth-segments* 25 mm. long, narrowly lanceolate, acute, waved and twisted, *spreading but not reflexed*, much *exceeding the corona*. Corona of the type, but slightly broader, not exceeding 20 mm. in length. Anthers with dark apical spot. Otherwise like the type.

N. Johnstonii is readily distinguished by its clear yellow, concolorous flowers, with long, narrow perianth-tube, more or less reflexed segments, and a subtruncate corona.

The history of this beautiful Daffodil curiously resembles that of *N. cyclamineus*. It was probably known to the horticulturists of the seventeenth century, although it cannot be certainly identified with any of the descriptions or figures in pre-Linnean works. It is evident that more than one yellow "clipt-trunk" Daffodil was in cultivation during this period, and of those figured by SWEERT (*l.c.*), *N. falsus tubo sexangulari*, which, judging from C. BAUHIN'S definition, bore a light yellow flower, appears most nearly to represent *N. Johnstonii*. HAWORTH, in his Monograph (p. 4), created a genus Oileus to receive these Daffodils with truncate coronas and described five species, based on the figures of SWEERT and RUDBECK. As he observes, however, that he had seen none of these plants and inserted them with a view to excite enquiry, his brief accounts are of little value.

In 1885 *N. Johnstonii* was discovered near Oporto by E. JOHNSTON and A. W. TAIT, and soon afterwards it was collected by BARR. HENRIQUES appears to have suggested that it was a hybrid, *N. Pseudo-Narcissus* × *calathinus*, and BARR and other cultivators have treated it as *N. Pseudo-Narcissus* ('Santa Maria'?) × *triandrus*. BAKER, on the other hand, noting the uniformity of the specimens which he examined, preferred to describe it as a variety of *N. Pseudo-Narcissus*. In COUTINHO'S Flora de Portugal, p. 141, what appears to be the same plant is shown as *N. Bulbocodium* × *Pseudo-Narcissus* Baker. If *N. Johnstonii* is a *triandrus* hybrid, it is remarkable that it uniformly possesses the equal stamens with linear, sub-basifixed anthers of an

* Planta quam typus humilior. Folia 8 mm. lata. Scapus lævis, haud striatus. Flos ad coronae marginem 40 mm. ad perianthii apicem 45 mm. longus. Perianthii tubus 20 mm. longus; segmenta 25 mm. longa, anguste lanceolata, acuta, undulata, torta, patentia sed non reflexa, coronam multo superantia. Corona typi sed paululum latior, haud plus 20 mm. longa. Antherae apice nigro-maculatae.

Ajax ; and if a *Bulbocodium* cross, some curvature of the stamens and style would be expected. The lack of these peculiarities tends to show that no *triandrus* or *Bulbocodium* element is present, as does also the relatively broad and flat foliage ; and these features seem to outweigh the somewhat *triandrus*-like corona, and the narrow perianth-tube and segments recalling a *Bulbocodium*. Moreover, at least in French gardens, the plant produces fully developed capsules and might perfect seeds under favourable conditions. Another fact that tells against hybridity is the plant's abundance. For nearly forty years it must have been collected annually for export in considerable quantity, for wild bulbs have been almost continuously on sale since the early nineties, in some years being offered by the thousand. It is difficult to believe that a Narcissus of hybrid origin could have multiplied to such an extent and remained so uniform. The 'Queen of Spain' is therefore treated as an Ajax, and, in view of its very distinct features, has been raised to specific rank. A varying form with a broader and less truncate corona, sometimes found with the typical plant, was formerly distinguished by BARR as 'King of Spain,' but I learn from his son that bulbs showing this peculiarity tend to revert to the ordinary form with narrower and straighter corona.

Of the variety *mirabilis* a few plants only were observed at a show of the Royal Horticultural Society in April 1931. It has been ascertained that these were collected in Northern Portugal for Messrs. VAN TUBERGEN, of Haarlem, by whom they were regarded as variants of a wild hybrid plant. But I can see nothing in them to indicate hybridity. There is a somewhat similar flower in Herb. Kew., labelled "*N. Johnstoni* v. Jose Marie, Hort. Barr, 1889."

In the Bol. Soc. Brot. V, p. 174, and t. B (1887), HENRIQUES has described a hybrid of *N. Pseudo-Narcissus* and *N. calathinus* occurring near Coruña, and proposed for it the name of *N. Taiti*. This plant is said to present two forms, of which one has a solitary flower and, as figured, in some degree resembles *N. Johnstonii*. But its perianth-segments are not reflexed and its stamens are stated to be unequal. At Kew there are two cultivated specimens (Hort. WOLLEY-DOD, 1889) said to represent two forms of *N. Pseudo-Narcissus* × *triandrus*. Of these, one has a solitary flower, resembling var. *mirabilis*, but the arrangement of its stamens cannot be seen.

N. Johnstonii grows in Galicia as well as in Northern Portugal, but it is a local species that is probably threatened with extirpation, for in Britain it seems rarely to thrive and maintain itself in cultivation, and hence is unceasingly collected.

SECTION II. PSEUDO-NARCISSUS.*

Flowers yellow with the corona more deeply coloured than the perianth, bicoloured, or rarely white. Perianth-segments never reflexed.

* Flores lutei coronâ quam perianthio plus minusve saturatiore, bicolores vel raro albi. Perianthii segmenta nunquam reflexa.

Series I. *Minores.**

Flowers small or very small, yellow or bicoloured, with flowering pedicel not deflexed or very short. Capsule more or less oblong, nearly terete or slightly trigonous.

3. NARCISSUS ASTURIENSIS (Jord.) comb. nov. (figs. 3c, 9).

N. minor Brotero, Fl. Lusit. i, 549 (1804), ex parte ? ; Willk. & Lge. Fl. Hisp. i, 151 (excl. syn. partim) (1861) ? ; Coutinho, Fl. Portugal, 141 (1913), ex parte ? ; *Ajax asturiensis* Jordan, Icon. Fl. Europ. iii, 4 (1903) ; *N. minimus* hort. recent., non *A. minimus* Haw.

Pseudo-Narcissus minor luteus repens Hort. Eystt. 3rd Ord. f. 5 (1613) ? ; *N. luteus repens* Bauh. Pin. 53 (1623) ? ; Rudbeck, Camp. Elys. 73, f. 14 (1701) ? ; *P. hisp. luteus minimus* Park. Par. 105 (1629) ? ; *N. hisp. pumilus flore luteo amplo calice* Theatr. Fl. pl. 20 (1633) ? ; *N. sylv. pallid. tuba aurea minimus* Barrel. Pl. Obs. t. 976 (1714) ?

Icones. Jordan, *l.c.* t. 367, as *A. asturiensis* ; Garden, xxiii, 287, as *N. minimus* ; Journ. Hort. Ser. III, xiv, f. 35, as *N. Pseudo-Narcissus minimus.*

Exsicc. Harper-Crewe, Pancorbo, 1881, in Hb. Kew., as *N. minimus* ; Barr, Busdongo, 1888, in Hb. Kew., as *N. minimus* ; Sennen, No. 5226, as *N. minor* ; Fl. Lusit. Exsicc., Carisso and Mendonga, Serra da Estrella (1600 m.), 1925, in Hb. Zurich, as *N. minor.*

Bulb very small, ovoid, about 15 mm. long and 10 mm. broad, with very thin, whitish scales. *Leaves* usually 2–3, *erect-spreading, 5–10* (rarely –15) *cm. long, glaucous, channelled throughout,* 2–6 mm. broad and somewhat *dilated above,* ribbed underneath, apex rounded-obtuse or sub-hooded. Scape 7–12 (rarely –15) cm. long, inclined, very slender, nearly terete (faintly 2-edged), strongly striate, solid. *Spathe greenish, sub-herbaceous.* Pedicel slightly curved, rather slender, shorter than or as long as the capsule (5–10 mm.). *Flower very small, inclined or drooping,* 20–25 mm. long (excluding ovary), *soft yellow and almost concolorous,* very slightly scented ; *perianth-tube* shaded with green, 7–9 mm. long (*shorter than the corona*), slightly inflated above, narrower at its base than the top of the ovary ; perianth-segments oblong-lanceolate, obtuse-mucronate, rather shorter than the corona, erect-spreading, slightly imbricated (more rarely narrower and not imbricated) ; *corona inflated below, contracted about the middle,* then rather abruptly dilated and *spreading at the margin,* which is sometimes divided into six rather obscure plicate-crenate lobes, sometimes scarcely lobed and rather deeply plicate-dentate or laciniate. *Filaments inserted close to base of perianth-tube.* Stigma relatively large. Capsule very small, about 10–14 mm. long, oval or pyriform, not trigonous or furrowed. Chalazal end of seed appendiculate. Chromosome number 14 (Collins).

β. *brevicoronatus* var. nov.†

Exsicc. Sennen, No. 138, as *N. minor.*

Leaves (usually 2) and scape slenderer than in the type. *Spathe whitish,* very thinly membranous. Pedicel very slender, 3–4 mm. long. Flower 15–20 mm. long, pale yellow ; *perianth-tube relatively longer,* subequalling the segments and corona, which are almost of equal length ; margin of corona less lobed and more serrate. [v.s.]

This, the smallest of the group, has been generally confused with *N. minor* in recent botanical works. From its characteristic habit and its peculiarly formed flowers it has the aspect of a distinct species, and it differs clearly from *N. minor* by its constricted corona and the

* Flores parvi vel minimi, lutei vel bicolores, pedicello florifero nec deflexo nec brevissimo. Capsula plus minusve oblonga, fere teres.

† Folia (saepissime 2) scapusque quam in typo graciliores. Spatha albida tenuissime membranacea. Pedicellus gracillimus, 3–4 mm. longus. Flos 15–20 mm. longus, pallide luteus ; perianthii tubus relative longior, segmenta coronamque, quae fere aequilonga sunt, aequans ; coronae margo minus lobatus magis serratus.

FIG. 8.—NARCISSUS JOHNSTONII var. MIRABILIS (nat. size) (above), N. NANUS (below).

Upper figure from plant exhibited at Vincent Square 1931; lower from Dean Herbert's drawing in the Lindley Library.

[*To face p.* 40.

FIG. 11.—NARCISSUS PUMILUS var. FIMBRIATUS.
From J. Hill's *Eden, or a Compleat Body of Gardening* (1757).

[*To face p.* 41.

basal insertion of its stamens. Its cytology also indicates its distinctness, its chromosome number being fourteen as compared with fifteen for *N. minor* and *N. pumilus*. It is apparently a widely spread species of the mountains of Spain from Asturias to Castile, extending into Central Portugal and possibly Galicia. Material from the different stations that has been examined varies appreciably. The diminutive variety *brevicoronatus* was collected in Castile. The species is one of the first to flower.

N. asturiensis was not distinguished by CLUSIUS, but it is presumably the above-cited plant of BESLER'S Hortus Eystettensis, which is clearly separated from *N. minor*. This plant, sometimes fairly and sometimes badly figured, appears in the works of several succeeding authors up to the time of BARRELIER and was evidently the smallest known Narcissus of the Ajax group. There is a specimen (a flower only, 18 mm. long) without leaves in the Sloane Herbarium (H.S. 319, f. 71) under the name of *N. juncifolius omnium minimus fl. aureo*, which may be confidently referred to *N. asturiensis*, although this cannot be confirmed by examining the insertion of the stamens. The specimen was received from BOERHAVE.

It is also uncertain whether the present species was known to LINNAEUS. It may have been regarded by him as belonging to *N. minor*, for while (in describing this species) in the case of C. BAUHIN and RUDBECK he cites *N. parvus totus luteus*, which is *N. minor*, and rejects *N. luteus repens*, which is probably *N. asturiensis*, in the case of BARRELIER he reverses his selection and cites No. 976, *N. pallidus minimus* (perhaps *N. asturiensis*), in preference to No. 975, *N. totus luteus minor* (*N. minor*). This may have been intentional, with the view of including both plants as falling under his *N. minor*. The insertion of "spatha virens"—a character of typical *N. asturiensis*—in his description of *N. minor* may possibly admit of the same explanation.

N. asturiensis seems to have been unknown to CURTIS, SALISBURY, HAWORTH and HERBERT. In his Revisio HAWORTH created a variety *minimus* of *A. minor*, distinguished as "foliis humum versus patulo-effusis coerulescenti-glaucis, flore ante anthesin ipsam humum nutantim tangente." This was raised to a species, *A. minimus*, in the Monograph and identified with *N. minor* Curtis, Bot. Mag. No. 6, but HERBERT (Amaryll. p. 415), who reduced the plant to a variety *humilior* of *N. minor*, stated that "the difference was scarce worth remarking." Of this plant there is good material at Kew, received from J. GAY, and it is clearly a small form of *N. minor* and not the present species. In HERBERT'S Amaryllidaceae (pp. 299, 300) two varieties, *cuneiflorus* Salisb. and *pumilus* Salisb., are inserted under *N. minor*, both barely described but depicted in figures on Plates 39 and 43, which recall *N. asturiensis*. HERBERT states that there are specimens of these varieties in Banks' Herbarium, but they cannot now be traced; and as he remarks (*l.c.*, p. 415), "I have never had *pumilus* and *cuneiflorus*," it is clear that he knew little

about them. SALISBURY'S names *pumilus* and *cuneiflorus* originally referred to one plant only, which is a widely different form.

When *N. asturiensis* was collected in Spain by BARR and others in the eighties, specimens were sent to Kew, and they were identified with the smallest form then known there, *A. minimus* Haw., and the figure of Bot. Mag. No. 6. It was probably impossible at that time to compare living examples, for HAWORTH'S plant seems to have been no longer in cultivation, and no accurate examination was apparently made, for the essential differences of the corona and stamens were not detected. The excellent description by JORDAN, with plate and dissection, was founded on material collected in the Asturias by REVERCHON in 1864.

BROTERO, in Fl. Lusitanica, I, p. 549, has described what may include the present species under the name of *N. minor* L., and has been followed by his successor COUTINHO. This is admissible in an aggregate sense in view of LINNAEUS' citation of BARRELIER No. 976 among his synonyms. A similar treatment has been adopted in the Flora Hispanica by WILLKOMM and LANGE, who, however, cite among their synonyms the *Pseudo-Narcissus minor hispanicus latifolius* of CLUSIUS, which is not *N. asturiensis*. It is probable that these authors were acquainted with one plant only of this group, as a native of Portugal or Spain, and that, as neither of them had presumably seen the Linnean specimen, which is the type of *N. minor*, they regarded the native plant which they knew as the normal Linnean species and described it under the name of *N. minor* accordingly. All the wild plants collected in Spain by SENNEN and others as *N. minor* that have been examined belong to *N. asturiensis*.

4. NARCISSUS LAGOI Merino, Fl. Galicia, iii. 615 (1909).

Bulb of moderate size, ovoid-globose, 20–40 mm. long and broad, with brownish scales. *Leaves* 2, *spreading*, shorter than the scape, glaucescent, *channelled*, 8–10 mm. broad, ribbed underneath, more or less twisted, obtuse and apically sub-hooded. *Scape elongate*, 40–50 cm. long, cylindrical, striate, with long sheaths below. Pedicel 10–15 mm. long. *Flower very small, horizontal*, 20–25 mm. long (including ovary), *yellow* with base of perianth-tube greenish; *perianth-tube nearly as long as the corona*, hexagonal; perianth-segments linear-oblong, erect-spreading, obtuse, mucronate, not twisted, subequalling the corona; *corona ventricose at the base, strongly contracted about the middle*, and dilated above, with margin plicate and cut into many erect, ovate or oblong, obtuse lobules, about a quarter as long as the corona itself. Stamens shorter than style. Stigma trilobed. Capsule very small, 5–7 mm. long and a little broader, obovoid-globose. [n.v.]

This remarkable plant was collected on the banks of the Minho near Lugo, in Galicia, and was at first referred to *N. minor* L. MERINO'S description, from which the above account has been taken, seems quite satisfactory, except that there is no allusion to the insertion of the filaments on the perianth-tube, which is an important feature in this series. The form of the flower plainly resembles that of *N. asturiensis* and not of *N. minor*, and the channelled foliage and cylindrical scape also recall the former species. It may be expected that the filaments will be found to be free to the base of the perianth-

tube, and if so, *N. Lagoi* is clearly an ally of *N. asturiensis*, which grows in the adjacent provinces. The occurrence of a tall Ajax species, with the tiny flowers of *N. asturiensis*, is somewhat analogous with the presence of the Greek *N. hellenicus* Pugsl. among the Poet's Narcissi.

5. NARCISSUS MINOR Linn. (figs. 3D, 10).

Narcissus minor Linn. Sp. Pl. ed. 2, 415 (1762), et ejusdem herb.; Brotero, Fl. Lusit. i, 549 (1804), ex parte ?; Mordant de Launay, Herb. Amat. iii, No. 165 (1819); Willk. & Lge. Fl. Hisp. i, 151 (1861) ?; Coutinho, Fl. Portugal, 141 (1913), ex parte ?; *N. exiguus* Salisb. Prodr. Stirp. 220 (1796); *Ajax pygmaeus* Salisb. in Trans. Hort. Soc. i, 343 (1812); *Ajax minor* Haw. Narciss. Revis. 111 (1819); Mon. 1 (1831); Herbert, Amaryll. 299 (1837); *N. Pseudo-Narcissus* subsp. *N. minor* Baker, Amaryll. 3 (1888); *N. nanus* and *N. minor*, ex parte, hort. recent.

Pseudo-Narcissus minor hispanicus latifolius Clusius, Hist. ii, 165 (1601) ?; *P. minor hispanicus* De Bry, Floril. Nov. Pl. 15 (1612); *Narcissus totus luteus montanus minimus* Hort. Eystt. 3rd Ord. f. 1 (1613); *N. parvus totus luteus*, C. Bauh. Pin. 53 (1623); Rudbeck, Camp. Elys. 72, f. 11 (1701); *P. hispanicus minor luteus* Park. Par. 105 (1629); Merian, Floril. Ren. t. 15 (1641); *Bulbocodium minus* J. Bauh. Hist. ii, 593 (1651) ?; Ray, Hist. 1131 (1688) ?; *N. sylvestris totus luteus minor* Barrel. Pl. Obs. t. 975 (1714) ?

Icones. Merian, *l.c.* t. 15; Rudbeck, *l.c.* f. 11; Herb. Amat. iii, f. 165; Herbert, *l.c.* pl. 38, f. 2.

Exsicc. J. Gay, Jardin des Plantes, Carrés Chaptal, 1818 and 1860, in Hb. Kew.; Collinson, Mill Hill, in Hb. Mus. Brit., as *N. exiguus*; Gadeceau, cult., in Hb. Mus. Brit. as *N. nanus*.

Bulb small, subrotund-ovoid, about 20 mm. long, with thin, whitish-brown scales. *Leaves erect-spreading, 8–12 cm. long*, glaucous, *slightly channelled*, 4–6 (rarely –8) mm. broad, attenuate above and rounded-obtuse. Scape 12–15 cm. long, nearly erect or inclined, slender, 2-edged but little compressed, strongly striate. Pedicel porrect and slightly curved, slender, usually nearly as long as the capsule (10–15 mm.). *Flower small, horizontal or nodding*, 30–35 mm. long (excluding ovary), *soft yellow with deep yellow corona* and green-tinted perianth-tube, faintly scented; *perianth-tube long* (about 14 mm.), at its base subequalling the ovary; perianth-segments ovate-lanceolate (inner narrower), acute, slightly imbricated below, erect-spreading and somewhat waved, almost equalling the corona; *corona without any contraction of the tube*, gradually a little *dilated towards its margin* and contiguously 6-lobed, with lobes erect-spreading, irregularly incised-crenate, strongly plicate and transversely rugose, the plication and rugosity extending down the corona within. Stamens and style relatively short; *filaments inserted about 4 mm. above base of perianth-tube*; stigma small, deeply 3-lobed. Capsule 15–25 mm. long, narrowly obovoid or oval-oblong, very bluntly trigonous and slightly furrowed. Chalazal end of seed strongly appendiculate. Chromosome number 15 (Collins).

β. *minimus* (Haw.) comb. nov.

N. minor Curtis, Bot. Mag. No. 6 (1787); *A. minor* α *minimus* Haw. Narciss. Revis. 112 (1819); *A. minimus* Haw. Mon. 1 (1831); *A. minor* v. *humilior* Herb. Amaryll. 299 (1837).

Icon. Bot. Mag. t. 6.

Exsicc. J. Gay, Carrés Chaptal, 1860 and 1863, in Hb. Kew., as *N. minimus* Haw.

Plant dwarfer than typical *N. minor*, with spreading leaves and slender, nodding scape. Flower very small, 20–30 mm. long. [v.s.]

The determination of *N. minor* is facilitated by its being a species of LINNAEUS, which is represented in his herbarium and is included in his enumeration of 1767, as shown in JACKSON's Index. The Linnean specimen consists of a single flower still in good condition though faded, and the sheet is marked in LINNAEUS' handwriting "~~moschatus~~ ~~odorus~~ minor." The flower evidently belongs to a form covered by the

author's account and the synonyms which he cites from CLUSIUS, C. and J. BAUHIN, RUDBECK and BARRELIER. It agrees with his diagnosis but not entirely with the description, of which one feature (*spatha virens*) is more nearly applicable to *N. asturiensis*. But it is doubtful whether this species was known to LINNAEUS, and evident that he did not accurately distinguish these dwarf Daffodils, and in a general way would have included them all under his *N. minor*. There is no indication that, when writing his account, he had any particular form in view, and this being so, there seems to be no option but to treat the Linnean specimen as the type of the species, and this view has been taken accordingly.

N. minor, as thus interpreted, was known as a cultivated plant as early as the beginning of the seventeenth century, and it had already been noticed by LOBEL [Stirp. Hist. p. 62 (1576)]. From PARKINSON we learn that it was grown in England shortly after this date, and a century later it was known to RUDBECK in Scandinavia. LINNAEUS gives its habitat as Spain, but whether this is simply taken from CLUSIUS or based on independent information is not certain. Among more recent authors SALISBURY [Trans. Hort. Soc. i. 343 (1812)] states that his *Ajax pygmaeus*, which is identical with *N. minor*, is wild in the mountains of Gerez, in Portugal, but this is repeated from BROTERO's Flora Lusitanica, i. p. 549, which SALISBURY cites under his *A. pygmaeus*. HAWORTH's only remark on the subject (Narciss. Revis. p. 112) gives the plant as coming chiefly from Spain, while HERBERT (Amaryll. p. 299) states that it is a native of the Pyrenees. MORDANT DE LAUNAY (*l.c.*) describes the species as a French garden plant, and furnishes an excellent figure with accurate dissections.

It is noteworthy that although a number of cultivated or naturalized examples of this plant exist in the Herbaria at Kew and the British Museum, no wild specimens can be traced. The *N. minor* of BROTERO (*l.c.*) and of COUTINHO (Fl. Portugal, p. 141), to judge from the descriptions, might well be *N. asturiensis*, and with this the account of WILLKOMM and LANGE (Fl. Hispanica, i. p. 151), excluding synonymy in part, also agrees. And, as already noticed, the wild Spanish sets sent out as *N. minor* by SENNEN are actually *N. asturiensis*.

There is a specimen in Herb. Mus. Brit. from the French Pyrenees (Mail du Cric, Luchon), labelled *N. minor*, which at first sight might appear correctly named, but it shows the short, bent pedicel and the serrated corona of *N. Pseudo-Narcissus* and will be treated here as a dwarf variety of that species. There are also wild examples at Kew which were sent to GAY in 1820 and 1862 from near Grasse, in Provence, as *N. minor*. The later of these specimens GAY was unable to separate from *N. Pseudo-Narcissus*, and they both appear to be a small form of this, somewhat similar to that growing at Mail du Cric. In the Manchester Herbarium there is another similar example from Grasse, collected by Miss TOWNSEND and labelled *N. minor*. Kew also possesses two gatherings named *N. minor*, which were collected by

MOGGRIDGE near Mentone. Some doubt attaches to these specimens, which are possibly referable to *N. pumilus* Salisb.

It would appear, therefore, that *N. minor* has not been collected as a wild plant for a very long period, and that nothing is actually known of its native habitat beyond the statements of CLUSIUS and BROTERO. But as *N. pumilus* has recently been refound in the Gerez Mts. of Portugal, it is not unlikely that *N. minor* also may occur in that region or in the Serra da Estrella, and will be once more collected.

Although this plant has been lost as a botanical species, it has been continuously grown by horticulturists from the time of PARKINSON, or even earlier, right up to the present day. SALISBURY [Trans. Hort. Soc. i. 343 (1812)] stated that it was easy to cultivate and had been grown in England since the time of PARKINSON. In the Gardeners' Chronicle, xix. 348 (1883), WOLLEY-DOD remarks: "Fifty years ago only one sort (*N. minor*) was common in our gardens. . . . In the border it increases fast." The form of modern gardens that matches the Linnean specimen and is therefore typical *N. minor* L. is still sold by Messrs. BARR and others under the name of *N. nanus*, but some Dutch growers, I believe, list it as *N. minor*. The confusion with *N. nanus* will be discussed under that species. Messrs. BARR also cultivate as *N. minor* some allied forms of stronger growth and finer flowers with more twisted perianth-segments and expanded corona. Two of these forms, which are similarly old garden plants, will be dealt with under *N. pumilus*.

As already shown, HAWORTH separated his *A. minimus* from *A. minor* (Monograph, p. 1) by its weak, spreading leaves and nodding scape, and cited CURTIS, Bot. Mag. No. 6, as a synonym. There are specimens at Kew named by GAY "*N. minimus* Haw." which are obviously not *N. asturiensis* but a weak form of *N. minor*. They agree with the descriptions of HAWORTH and HERBERT, and appear correctly named. CURTIS' plate does not clearly show the form of the corona and perianth-tube, and has no dissections, so that it might almost equally well represent a small form of *N. minor* or *N. asturiensis*, but it is clear from the cultural remarks that the former of these is intended. The variety *minimus* seems to have been lost to cultivation since the time of HERBERT and before *N. asturiensis* was re-introduced into Britain.

6. NARCISSUS PUMILUS Salisb. (fig. 3E).

Narcissus pumilus Salisb. Prod. Stirp. 220 (1796); *N. minor* Brotero, Fl. Lusit. i, 549 (1804), ex parte ?; Coutinho, Fl. Portugal, 141 (1913), ex parte ?; *Ajax cuneiflorus* Salisb. in Trans. Hort. Soc. i, 343, excl. syn. pro maj. parte (1812); Haw. Narciss. Revis. 113 (1819); *A. pumilus* Haw. Mon. 1 (1831); Sweet, Brit. Fl. Garden, 2nd ser. ii, No. 143 (1833); *N. minor* var. *cuneiflorus* Willk. and Lge. Fl. Hisp. i, 151 (1861) ?; *N. minor* (ex parte) hort. recent.

Narcissus totus luteus medius De Bry, Floril. Nov. Pl. 15 (1612); Merian, Floril. Ren. t. 15 (1641); *N. pumilus* Passeus, Hort. Florid. iv, 8 (1614) ?; *Pseudo-Narcissus hisp. medius luteus* Park. Par. 104 (1629) ?; *N. hisp. medius luteus* Theatr. Fl. pl. 20 (1633) ?

Icones. De Bry. *l.c.* pl. 15; Merian, *l.c.* t. 15; Sweet, *l.c.* t. 143; Red. Lil. viii, 480, as *N. minor*; Burbidge, Narciss. Pl. 5A, as *N. Pseudo-Narcissus* v. *minor* ?

Exsicc. Hort. Soc. Hort. Lond. 1834, in Hb. Kew. and Hb. Lindley, as *A. pumilus*; Pugsley, No. 475.

Bulb rather small, subrotund-ovoid, 25–30 mm. long, with pale brown scales. *Leaves erect-spreading*, undulate, *12–20 cm. long*, glaucous, *nearly flat* and not twisted, 5–8 (rarely –10) mm. broad, attenuate above, obtuse. Scape 15–22 cm. long, suberect, moderately stout, little compressed, 2-edged, striate. Pedicel porrect and slightly curved, rather slender, 10–15 mm. long. *Flower rather small, horizontal*, 35–45 mm. long (excluding ovary), *bright yellow, with golden-yellow corona* and perianth-tube tinged with green at the base, faintly scented; *perianth-tube long* (16–18 mm.), narrowly obconic as in *N. minor*; *perianth-segments narrow*, oblong-lanceolate, subacute, mucronulate, *not imbricated*, erect-spreading and slightly twisted, equalling the corona; *corona straight below, dilated towards the margin* and cut into six distinct, spreading lobes, which are irregularly and sparingly crenate-dentate, more or less regularly plicate, and minutely transversely rugulose. Stamens and style relatively short; *filaments inserted 3–4 mm. above base of perianth-tube*; stigma small, deeply 3-lobed. Capsule about 20 mm. long, oblong or ellipsoid, bluntly trigonous, not furrowed. Chromosome number 15 (Collins).

β. *fimbriatus* var. nov.* (fig. 11).

Narcissus totus luteus medius Hill, Eden, 184 (1757).
Icon. Hill, Eden, *l.c.*
Exsicc. Pugsley, No. 470 (type); Gadeceau, cult. 1901, in Hb. Mus. Brit., as *N. minor.*

Leaves suberect or reflexed above. Scape 15–25 cm. long, nearly erect. Perianth-segments rather narrower, spirally twisted; *margin of corona cut into six* distinct, spreading *lobes*, which are deeply incised-dentate or *subfimbriate*, with about 3 narrow segments to each lobe. Otherwise as in the type.

N. pumilus is a larger plant in all its parts than *N. minor*, with very narrow perianth-segments and an elaborately frilled corona that almost recalls *N. hispanicus*.

Like *N. minor* the present species is an old garden Daffodil, still in cultivation, whose origin until very lately was unknown. It has now been found in a dwarf form in the Serra de Gerez in Portugal, at an altitude of 6,000 feet, by Dr. P. L. GIUSEPPI, and it is said to grow also in the Serra da Estrella. Dr. DENNIKER, of Zurich, who collected *N. asturiensis* in the Serra da Estrella in 1921, reports that he also saw there another dwarf Daffodil with larger and more deeply coloured flowers. This was probably *N. pumilus* or *N. minor*. The two stations have been given in the Portuguese floras for *N. minor*, with which both *N. pumilus* and *N. asturiensis* have no doubt been confused.

It is not certain how far *N. pumilus* was known to the early writers, for some of the synonyms cited under *N. minor* may refer to or include it; but it appears to be the plant of DE BRY and MERIAN cited above, and that figured in the Hortus Floridus. The flower of DE BRY'S and MERIAN'S figures recalls the variety *fimbriatus* almost as much as the typical form. *N. pumilus* seems also to have been known to PARKINSON and to be figured in the contemporary Theatrum Florae. In HILL'S Eden the variety is appropriately termed the "Fringed

* Folia suberecta vel sursum reflexa. Scapus 15–25 cm. longus, fere erectus. Perianthii segmenta paulo angustiora, spiraliter torta; coronae margo in sex lobos distinctos patentes, alte inciso-dentatos vel subfimbriatos fissus.

Narcissus," and is unmistakably figured and described. HILL states that it is a useful early-blooming Narcissus with flowers of a fine yellow.

There is no evidence that this plant was known to LINNAEUS, but it was redescribed by SALISBURY (*l.c.*) as *N. pumilus* in 1796, which name was subsequently changed by its author to *Ajax cuneiflorus*. SALISBURY distinguished two allied species, *N. exiguus* (*N. minor* L.) and *N. pumilus*, of the former of which there is material in the British Museum Herbarium received from COLLINSON and labelled in SALISBURY's hand "*exiguus* Salisb." This specimen is identical with LINNAEUS' type of *N. minor* and is cited under that species. There appear to have formerly been authentic specimens of the second plant in Herb. Mus. Brit. under the names of *pumilus* and *cuneiflorus*, but these cannot now be traced. And it happens unfortunately that none of these dwarf species is included in the collection of SALISBURY's drawings at South Kensington. There is, however, a specimen in Lindley's Herbarium, now at Cambridge, received from the London Horticultural Society in 1834, and named "*A. pumilus*" by SABINE and HAWORTH, which is evidently authentic. This shows a flower 43 mm. long, identical, so far as can be seen, with that of the plant now described. Another similar specimen, of the same date and from the same source, is at Kew. HAWORTH, in his Revisio (*l.c.*), furnishes a detailed description of *N. pumilus*, noting its broad leaves and spreading, lobed corona, and emphasizing its peculiarly narrow, non-imbricating perianth-segments. There is no discrepancy between his account and the original diagnosis of SALISBURY. SWEET (*l.c.*) also describes and figures *N. pumilus* with similar characters, and states that it was from HAWORTH that his plants were obtained.

On comparing the authentic specimens of *N. pumilus* and the figures of SWEET and HILL with the plants grown at the present day by Messrs. BARR as *N. minor* and "*N. minor* seedling," it is clear that they are all conspecific and that "*N. minor* seedling" most nearly agrees with the typical species. This form was stated in SALISBURY's original account (Prodr. Stirp. p. 220) to be difficult to cultivate and to be grown in Holland, and it is understood that "*N. minor* seedling" is still obtained from that country. HAWORTH thought that *N. pumilus* came from Spain, but this seems to have been merely conjecture.

The variety *fimbriatus* appears certainly to have been grown in Britain at least since the middle of the eighteenth century, but without ever becoming widely known. There is no definite information of the source whence it was originally obtained, but it was probably grown in Holland with the type at some former period.

Specimens collected by MOGGRIDGE at two spots on the French Riviera (perhaps wild stations) in 1869 and 1871, and referred to *N. minor*, are possibly forms of *N. pumilus*. And the *exsiccata* "Reverchon, Pl. de France, 1886, No. 134, Mont Aution, Alpes Maritimes," as *N. Pseudo-Narcissus*, seems to be the same plant. There is a further example in Herb. Lacaita (No. 4971) from La Granja,

in Old Castile, that likewise recalls this species, although its pedicel is rather short and the colour of the flowers now indeterminable.

7. NARCISSUS NANUS Spach (figs. 3F, 8, 12).

Narcissus nanus Spach, Hist. Nat. Vég. Phan. xii, 433 (1846); *Ajax minor* var. *conspicuus* Haw. Narciss. Revis. 112 (1819); *A. nanus* Haw. Mon. 2 (1831); *A. minor* var. *nanus* Herb. Amaryll. 300 and 415 (1837); *N. nanus* (ex parte) and *N. lobularis* hort. recent., non *A. lobularis* Haw.

Pseudo-Narcissus minor hispanicus latifolius Clusius, Hist. ii, 165 (1601) ?

Icones. Barr, Narcissus, p. 35; Nicholson, Dict. Gard. ii, f. 647, as *N. Pseudo-Narcissus minor.*

Exsicc. Hb. Fielding, as *N. minor conspicuus* Sab.; J. B. Syme, cult., 1864, in Hb. Manchester; Hort. Soc. 1884, in Hb. Kew., as *N. minor major*; Gadeceau, cult. Vilmorin, in Hb. Mus. Brit., as *N. lobularis*; Pugsley, Nos. 464 and 464A.

Bulb small, subrotund, about 25 mm. long, with thin, pale brown scales. *Leaves nearly erect, 12–18 cm. long,* glaucous, *flat, 8–14 mm. broad,* with rounded-obtuse, scarcely attenuate apex. Scape 15–20 cm. long, erect, rather slender, much compressed, finely striate. Pedicel inclined and curved above, 7–10 mm. long. *Flower small, horizontal or ascending,* 30–35 mm. long (excluding ovary), *sulphur-yellow, with* tube slightly tinged with green and *bright yellow corona,* deepening towards the margin, faintly scented; perianth-tube 11–14 mm. long, more broadly obconical than in *N. minor* but with base narrower than ovary; *perianth-segments ovate* (inner narrower and ovate-oblong), obtuse-mucronate or shortly acute, imbricated, erect-spreading and nearly flat, a little shorter than the corona; *corona broad, straight, scarcely dilated above,* plicate-rugose and with suberect margin cut into contiguous, much plaited and slightly crenate lobes. *Filaments inserted about 3 mm. above base of perianth-tube.* Stigma not deeply lobed. Capsule 12–16 mm. long, oblong-obovoid, nearly terete, very obscurely trigonous and furrowed, slightly rugose. Chromosome number 14 (Philp).

N. nanus, which is an early bloomer, differs widely from *N. minor* and *N. pumilus* by its stiffer, more erect growth and broader, more obtuse foliage, as well as its rather paler flowers, with distinctly broader perianth-segments and corona, and its shorter, broader capsules. It is therefore treated as a separate species.

This species has not at any time been identified in the works of pre-Linnean authors, but judging from its broad foliage, it may possibly be the *Pseudo-Narcissus minor hispanicus latifolius* of CLUSIUS [Rar. Plant. Hist., ii. 165 (1601)]. It is first mentioned as a variety of *A. minor* in HAWORTH'S Revisio (*l.c.*), where it is described as a taller plant with erect leaves, received under the name of *N. major* from Holland and growing in the garden of the London Horticultural Society. HAWORTH had not yet seen its flower. In the Monograph it is raised to specific rank as *A. nanus* (dwarf sulphur), with a diagnosis "Corollae laciniis subsemierectis ovatis sulphureis tubo sesquilongioribus, corona perlutea subrecta, ore lobatim crenata plicatula crispa . . . Folia glaucissima, semiunciam lata. Flos sesquiuncialis fere inodorus, aperiens f. Feb. seu i. Mart." Herbert reduces the plant to a variety *nanus* of *A. minor*, and in his "Postcript" (*l.c.* 415) states that it is more erect than the type, with a scape 8 inches high, and less tortuous leaves $\frac{3}{8}$ inch wide. It fortunately happens that among HERBERT'S drawings preserved in the library of this Society is an excellent coloured figure labelled "*Ajax nanus*" in HERBERT'S handwriting. The early specimen in Herb. Fielding cited above, and that at Manchester,

FIG. 13.—"NARCISSUS MAJOR LUTEUS CALICE PRAELONGO ALTER"
(= N. HISPANICUS var. SPURIUS).
From O. RUDBECK'S *Campi Elysii* (1701).

[*To face p.* 49.

which is labelled "*Narcissus nanus*" by SYME himself, accord with the accounts of HAWORTH and HERBERT, and the latter's drawing.

At Kew there exists a single flower sent by BARR in 1873 with several others for naming which seems identical with that in Herb. Fielding and Herb. Manchester. It was stated by BARR to belong to a form sold by the Dutch as *N. minor*, and he suggested that "seeing we have an illustrated *minor* and a better thing, a name is desirable." The flower was determined at Kew as *N. lobularis*, which is the Tenby Daffodil. But BARR's flower is much smaller than that of this species, and was probably much paler, and it is difficult to understand why this name was given. In 1884, in Ye Narcissus (pp. 34, 35) BARR included a form *lobularis* under the group *Pseudo-Narcissus*, presumably for the plant so determined at Kew, and a form *nanus* under the group *minor*. In describing the former he mentions the colour of the flower only, but the latter is described as having comparatively broad perianth-segments and is figured as a short, broad flower that recalls the early specimens at Oxford and Manchester, and also the Dutch flower that Kew had named *lobularis*. In this pamphlet BARR contrasts the squat flower of *N. nanus* with the narrower, more graceful blossom of *N. minor*. A year later W. B. HARTLAND, in his Little Booke of Daffodils (pp. 6, 7), catalogued a *nanus* (*latifolius*) of English gardens and a *nanus* (*angustifolius*) of Irish gardens. The first of these seems to be the plant cultivated in Holland and figured by BARR, and the other is probably *N. minor*. NICHOLSON'S Dictionary of Gardening, v. ii. (1886), furnishes two figures of *nanus*, one (f. 646) not quite certain but favouring a narrow-leaved form, and the other (f. 647) a reproduction of BARR's illustration. It is not easy to trace what happened in the immediately succeeding years, but before 1900 HARTLAND'S *nanus* of English gardens, or a similar form, was being sent out by BARR and other English nurserymen as *N. lobularis*, and the name *nanus* was being applied to a narrow-leaved plant which is really *N. minor* L. Meanwhile, the plant sold in Holland in the early seventies as *N. minor* had become *N. nanus*. This naming has continued, so that at the present day the erect, broad-leaved form is the *lobularis* of BARR and some English nurserymen and the *nanus* of the Dutch and certain other English growers. There is no reasonable doubt, however, but that this plant matches the early specimens cited from Herb. Fielding and Herb. Manchester, and agrees with the accounts and figure of HAWORTH and HERBERT, and it is therefore held to be the original *A. nanus*.

This species is not known as a wild plant and awaits rediscovery.

8. NARCISSUS PARVIFLORUS (Jord.) comb. nov.

Ajax parviflorus Jordan, Icones Fl. Europ. iii, 4 (1903).
Icon. Jordan, *l.c.* t. 366.

Bulb of moderate size, ovoid, about 30 mm. long. *Leaves erect, 25 cm. long, exceeding the scape*, pale glaucous green, *slightly channelled above* and convex below, twisted, rather narrow (*7–8 mm. broad*), attenuate-obtuse. Scape 20 cm. long, erect, fairly compressed, finely striate. Pedicel curved, ascending, 15–20 mm.

long. *Flower small, drooping*, 30 mm. long (excluding ovary), *cream-coloured with* yellow tube and *golden-yellow corona*; *perianth-tube rather short* (9 mm. long); *perianth-segments ovate-lanceolate*, acute or acuminate, or the inner oblong, obtuse and apiculate, scarcely imbricated, ascending, waved and somewhat twisted, rather shorter than the corona; *corona straight, subcylindrical, not expanded above*, with suberect margin very obscurely crenate-lobate. *Filaments inserted 4–5 mm. above base of perianth-tube.* Capsule about 15 mm. long, rotund-ellipsoid, obtuse, terete and not trigonous, furrowed. [n.v.]

This very distinct, small-flowered Daffodil was discovered near Gèdres, in the French Department of Hautes-Pyrénées. The description has been adapted from JORDAN'S account and the excellent plate by which it is illustrated.

N. parviflorus grows in the vicinity of *N. abscissus*, which it somewhat resembles in habit and the form of its corona. The arrangement of the stamens, however, is widely different, and in the present state of our knowledge it seems best placed among the *Minores*.

Series II. *Lutei.**

Flowers small to large, deep yellow or golden (paler in *N. pisanus*), with the flowering pedicel not deflexed and rarely very short. Capsule more or less oblong-obovoid, trigonous.

9. NARCISSUS HISPANICUS Gouan (fig. 3 G).

Narcissus hispanicus Gouan, Illustr. Bot. 23 (1773); *N. major* Curtis, Bot. Mag. No. 51 (1788); Haw. in Trans. Linn. Soc. v, 243 (1800); Willk. and Lge. Fl. Hisp. i, 152 (1861); *N. grandiflorus* Salisb. Prodr. Stirp. 221 (1796); *Ajax grandiflorus* Salisb. in Trans. Hort. Soc. i, 344 (1812); *A. major* Haw. Narciss. Revis. 116 (1819); Mon. 4 (1831); *A. luteus* var. *major* Herbert, Amaryll. 304 (1837); *N. Pseudo-Narcissus* subsp. *N. major* Baker, Amaryll. 4 (1888); *N. Pseudo-Narcissus* subsp. *N. sylvestris* race *N. major* Rouy, Fl. France, xiii, 30, excl. var. β (1912); *N. major* and *N. maximus* hort. recent. pro maj. parte.

Pseudo-Narcissus aureus praecox Hort. Eystt. 3rd Ord. f. 6 (1613); *N. major totus luteus calice praelongo* C. Bauh. Pin. 52 (1623), ex parte; Ray, Hist. 1130 (1688); Rudbeck, Camp. Elys. 71, f. 9 (1701); *P. aureus hisp. maximus* Park. Par. 99 (1629); *N. hisp. luteus major amplo calice* Theatr. Fl. pl. 20 (1633).

Icones. Hort. Eystt. *l.c.*; Theatr. Fl. *l.c.*; Rudbeck, Camp. Elys. *l.c.*; Bot. Mag. t. 51; Nees and Sinning, Samml. Schönblüh. Gewächs. t. 31, as *N. major* (form with short pedicel).

Exsicc. Hort. Soc. Hort. Lond., 1834, in Hb. Kew. and Hb. Lindley, as *N. major*; Hort. H. S., 1824, in Hb. Fielding, as *N. major*; Forbes Young, Ruxley Lodge, 1851, in Hb. Kew., as *N. major*; Gadeceau, cult., Le Cellier, Nantes, 1906, in Hb. Mus. Brit., as *N. major*.

Bulb of moderate size or rather large, ovoid, 40–50 mm. long, with brown scales. *Leaves erect*, 40–50 cm. long, glaucous, flat and more or less *spirally twisted*, 10–12 mm. broad, obtuse, attenuate above. *Scape 40–60 cm. long* (rarely –90 cm.), erect, stout below but attenuate above, *much compressed* and acutely 2-edged, *finely striate*. *Pedicel* rather slender, *erect but curved above, elongate* (25–35 mm.). *Flower large*, suberect or nearly horizontal, 50–60 mm. long (excluding ovary), *deep golden yellow* and nearly concolorous, with green perianth-tube, sweetly scented; *perianth-tube rather short*, about 18 mm. long; *perianth-segments* oblong-lanceolate, subacute, very slightly imbricated below, spreading-incurved, regularly *spirally twisted*, as long as the corona; *corona* slightly hexagonal, with an *abruptly dilated and widely spreading margin* (about 45 mm. across), which is obscurely lobed, deeply crenate-dentate and irregularly

* Flores parvi ad magni, saturate lutei vel aurei (in *N. pisano* pallidiores), pedicello florifero haud deflexo raro brevissimo. Capsula plus minusve oblongo-obovoidea trigona.

plicate-recurved. Stamens and style relatively short; filaments inserted 3–4 mm. above base of perianth-tube; anthers with minute dark apical spot. *Capsule* 20–30 mm. long, *oblong-ellipsoid, bluntly trigonous* with shallow furrows. Chromosome number 21 (Philp).

β. *propinquus* (Herb.) comb. nov.

N. propinquus Salisb. Prodr. Stirp. 221 (1796), excl. syn.; *N. major* var. β Ker in Bot. Mag. No. 1301 (1810); *Ajax lacinularis* Salisb. in Trans. Hort. Soc. i, 344 (1812); *A. propinquus* Haw. Narciss. Revis. 115 (1819); Mon. 3 (1831); *A. luteus* var. *propinquus* Herbert, Amaryll. 304 (1837); *N. major* hort. recent. (partim).

P. major hispanicus totus luteus Merian, Floril. Ren. t. 15 (1641) ?

Icones. Bot. Mag. t. 1301 β; Reichb. Icones Fl. Germ. ix, f. 817, lower flower, as *N. major*.

Exsicc. Pommaret, Rangouse, près l'Agen, 1831, in Hb. Kew., as *N. major*; Forbes Young, Cobham Lodge, 1853, in Hb. Kew.; T. Moore, Chelsea, 1852, in Hb. Kew.; *N. propinquus*, without data, in Hb. Fielding.

Leaves less twisted than in the specific type. Scape rather less compressed; *pedicel shorter* (15–25 mm. long), often stouter, but little curved. Flower suberect or horizontal, 50–65 mm. long, golden-yellow with perianth-tube and base of segments flushed with green, sweetly scented; perianth-tube 15–20 mm. long; outer *perianth-segments* oblong, inner oblong-lanceolate, all obtuse, mucronulate, very little imbricated, suberect-incurved, *slightly twisted*, irregularly undulate, as long as the corona or nearly so; *corona gradually dilated above, with erect-spreading margin* (up to 40 mm. across), which is cut into six unequal, contiguous, irregularly crenate-dentate, longitudinally plicate lobes; interior of corona transversely rugulose. Capsule 20–28 mm. long, oblong, very obtuse, bluntly trigonous with flattish sides, scarcely furrowed. Otherwise like the type. Chromosome number 14 (Philp).

γ. *spurius* var. nov. (fig. 13).

Ajax spurius Haw. Syn. Pl. Succ. App. 327 (1812); Narciss. Revis. 115 (1819); Mon. 3 (1831).

N. major luteus calice praelongo alter Rudbeck, Camp. Elys. 72, f. 9 (1701).

Icon. Rudbeck, *l.c.*

Exsicc. Gadeceau, cult., 1905, in Hb. Mus. Brit.

Dwarfer than the preceding. Scape about 30 cm. long. Pedicel rather short (about 15 mm.). Flower 45–55 mm. long; perianth-tube 15–20 mm. long; *perianth-segments ovate-elliptic*, subacute, imbricated below, ascending, *undulate, as long as the corona*; *corona* somewhat dilated above, *distinctly 6-lobed*, with obscurely crenate, subplicate lobes. Otherwise like the type.

δ. *concolor* var. nov.

Ajax concolor Jordan, Icones Fl. Europ. iii, 1 (1903).

Icon. Jordan, *l.c.* t. 355.

Exsicc. Herb. Syme, Le Luc, Var, in Hb. Manchester, as *N. major*.

Leaves not twisted, about 10 mm. broad. Scape not much compressed, rather slender, striate. Pedicel 15–20 mm. long. *Flower* horizontal, *rather long and narrow*, 50–65 mm. long, golden-yellow; perianth-tube about 15 mm. long; *perianth-segments* lanceolate-elliptic, erect-spreading, *twisted*, shorter than the corona; *corona with* spreading and *deeply 6-lobed margin, lobes finely* and elegantly *crenate*, not contiguous. Capsule oblong-ellipsoid, subtruncate, obtusely trigonous. Otherwise like the type. [v.s.]

N. hispanicus is easily recognized by its erect pedicels, and its deep golden flowers, usually of large size, with twisted perianth-segments and expanded corona, often elaborately lobed and plaited. Its stamens and style are relatively short, and its capsule usually oblong and trigonous.

This handsome Daffodil has been widely known in Europe as a garden plant since the latter part of the sixteenth century. It seems to be first noticed by LOBEL [Stirp. Hist. p. 62 (1576)], who mentions its large, wholly yellow or orange flowers; and it is distinguished

and figured by DODONAEUS [Stirp. Hist. Pemptades, p. 227 (1583)]. It also appears as the Spanish single Daffodil in GERARD'S Herball (1597). It has been generally identified with the *Pseudo-Narcissus major hispanicus* of CLUSIUS (Rar. Plant. Hist. ii. 165), stated to grow in meadows of Old Castile, but this is probably inaccurate, for CLUSIUS' plant is not large-flowered. According to GOUAN, its habitats are the Pyrenees and Monte Calcaris in the Cevennes. SALISBURY, in Trans. Hort. Soc. (*l.c.*), states that it grows wild plentifully in the mountains of L'Esperou, which appears to be the same station as GOUAN'S Monte Calcaris. HERBERT (*l.c.*) gives it as found on hills near Limoges, in the south-west of France, but at some distance north of the Pyrenees. I have seen no certainly wild *exsiccata* that clearly belong to the typical form of this species as defined above, but at Kew there are two very large flowers that belong here, which were sent from Cork by HARTLAND BROS. as wild examples, but without any definite information as to locality. These were probably collected in the Pyrenees, where the plant has been obtained in quite recent years for horticultural purposes. WILLKOMM and LANGE (*l.c.*) consider *N. hispanicus* a plant of meadows and grassy places of the mountain region of the Pyrenees, Cantabria, Old Castile and Granada, but it is likely that the form occurring in the last two provinces may be that now separated as *N. confusus*. MERINO (Fl. Galicia, iii. 112) records *N. hispanicus* for the districts of Coruña and Pontevedra.

It would thus appear that *N. hispanicus* grows in South-West France and is scattered over a great part of Northern Spain from the Pyrenees to Galicia. ROUY (*l.c.*) only admits *N. hispanicus* as a naturalized plant in France, but it undoubtedly still exists as a native on the French side of the Pyrenees. A small form resembling typical *N. hispanicus* occurs also in northern Portugal and is known in horticulture under the name of 'Santa Maria.' A wild example in Herb. Kew (FONSECA, Fl. Lusit. No. 581, Serra da Estrella, 1879) may belong to this form.

Another specimen of interest in Herb. Mus. Brit. is a double-flowered form, labelled "*N. hispanicus* Gouan. Hb. Nolte. Misit Gouan. Lapeyrouse, 1807." This appears to be an authentic example of GOUAN'S *N. hispanicus* A (*N. . . . multiplex calice carens*), but I judge from its stout scape and pedicel that it is not really a double-flowered example of *N. hispanicus*, but rather identical with the present-day English double Daffodil, which HAWORTH finally referred to another species, *A. lobularis*.

The name *A. Telamonius* (at first written *A. Telamon*), to which the common double form of gardens was first referred, originated in HAWORTH'S Synopsis Plant. Succ. App. p. 326 (1812), to represent a large species with very broad leaves and yellow flowers longer than those of any other form. It was kept up by HAWORTH in the Revisio and in the Monograph, but as no synonyms were given and no authentic specimens are known, it is not possible, in view of the meagre description, to identify the plant with accuracy. Material under this

name in Herb. Gadeceau appears to be a rather small form of *N. hispanicus* near var. *propinquus*, but with a less cut corona. BARR and WOLLEY-DOD regarded *N. Telamonius* as allied to *N. Gayi* ("princeps" hort.). The common double Daffodil of our gardens, often named "*Telamonius plenus*," shows the strongly compressed scape which characterizes both *N. hispanicus* and *N. Gayi*, but its foliage is essentially different from that of either of these two species, and it is more probably a sport of some other Spanish Daffodil that was formerly collected.

N. hispanicus seems to grow also in Italy, where it is perhaps of ancient naturalization. There are specimens at Kew from Elba (MARTIN, 1794) and from Naples (JAN, No. 26, 1828).

In the explanation of plates (p. ix) of BURBIDGE'S Narcissus it is noted that the plants from which the figures of this species were drawn were from two to three feet in height. This seems an enormous size for any wild species of the subgenus Ajax, but it is sometimes attained by a form of *N. hispanicus* grown in Ireland. BAKER, in a short article on British Daffodils in Journ. Bot. xxii. p. 194, gives the length of the scape of *N. major*, as exhibited at the Daffodil Show of April 1, 1884, as often 1½–2 feet. SALISBURY (Trans. Hort. Soc. i. 344) speaks of this species as a noble plant, and states that it requires rich, deep loam in cultivation.

The variety *propinquus* seems to have been regarded by the older writers as a cultivated form, and I can find no definite reference to any natural habitat. SALISBURY, in his original description (*l.c.*), states that it is a plant cultivated in Holland, and in Trans. Hort. Soc. (*l.c.*) remarks that it was grown by Dr. RICHARDSON at North Bierly in 1712. The *exsiccata* cited above (Pommaret, Agen), which is annotated by J. GAY as representing *N. major* β of Bot. Mag. t. 1301, may perhaps have come from a natural station, for Agen (Lot-et-Garonne) is adjacent to the Pyrenean region, where forms of this species are truly wild. I learn from Mr. P. R. BARR that he has lately received bulbs from the neighbourhood of Bayonne that are scarcely separable from var. *propinquus*.

In recent years the variety *propinquus* has been almost lost to horticulture, and is perhaps most nearly represented by the popular garden plant known as 'Golden Spur,' which is somewhat intermediate between the varieties *propinquus* and *spurius*, but larger-flowered than either. 'Golden Spur' is largely grown in Holland, and has been distinguished in Messrs. BARR'S catalogues as "Native of the Netherlands." It was first exhibited at the Royal Horticultural Society in 1895, and I understand was propagated from bulbs found apparently wild on a Dutch estate near The Hague a few years previously. But these bulbs were almost certainly only naturalized, and relics, or possibly hybrids, of the older *propinquus* and other allied forms formerly cultivated.

There are good figures of *N. major* and *N. propinquus* in the collection of SALISBURY'S MS. and drawings preserved at South Kensington.

The variety *spurius* was first described by HAWORTH (*l.c.*) from specimens which he saw growing in COLLINSON'S garden at Mill Hill. No synonyms were cited in the original account, but subsequently, in the Monograph, he quoted RUDBECK, Camp. Elys. 72, f. 9, which is a good figure that enables the peculiar characters of the plant to be appreciated. Through this figure the form subsequently sold by nurserymen under the name of " spurius " was probably correctly identified. In quite recent years this variety, which is rather dwarf and of neat and pretty habit, has been discarded in horticultural catalogues and it is no longer easy to obtain. It still grows, however, in old gardens, as at Kew and Hampton Court. A wild plant (BOURGEAU, Pl. d'Espagne, No. 2701, Leitariegas, Asturias, in Herb. Mus. Brit., as *N. major*) from Northern Spain resembles this variety, but has rather smaller flowers borne on short pedicels. There are similar Galician examples at Kew, collected by BARR.

The variety *concolor*, which is beautifully figured by JORDAN, resembles the cultivated form ' Golden Spur,' but differs in its slenderer flowers with the lobes of the corona distinct and exquisitely crenulated. JORDAN'S account is taken from plants growing in the south of France, at Le Luc, in the Dept. of Var.

N. major is occasionally cited in error as of LINN. Sp. Pl., ed. 2, p. 415. The name is not to be found in the Species Plantarum, and the mistake is apparently due to LINNAEUS' citation, under *N. bicolor*, of a second synonym from C. BAUHIN'S Pinax—*N. major totus luteus calice praelongo*—which presumably refers to this plant.

10. NARCISSUS LONGISPATHUS sp. nov.*

N. major var. *longispathus* Degen and Hervier in sched. (nomen).
Exsicc. Reverchon, Pl. d'Espagne, 1906, No. 1415, Sierra de Cabrilla.

Plant tall. Bulb not seen. *Leaves erect*, 40–60 cm. long, green, *flat*, 10–15 mm. broad, obtuse but attenuate above. *Scape tall*, erect, *stout*, compressed, sharply 2-edged ; *spathe* of variable length, *sometimes very long* (10 cm.) but never short. *Pedicel* slender, *erect, elongate, 40–90 mm. long. Flower rather small*, suberect or ascending, 35–45 mm. long (excluding ovary), *apparently deep yellow* and nearly concolorous ; *perianth-tube short and rather broad*, 10–15 mm. long ; *perianth-segments* ovate-elliptic or elliptic, cuspidate or acute, imbricated, erect-spreading, *apparently not twisted*, a little shorter than the corona ; *corona rather broad, slightly dilated* but apparently little spreading *above*, with obscurely lobed and slightly crenate margin. Filaments inserted about 3 mm. above base of perianth-tube. Style rather long. *Capsule* (immature only seen) fully 20 mm. long, *oval-oblong, bluntly trigonous.* [v.s.]

N. longispathus is a remarkable Daffodil of the largest size, with small flowers recalling in form those of *N. obvallaris*, but borne on

* Planta elatior. Folia erecta, viridia, complanata, 10–15 mm. lata, apice attenuata. Scapus altus, robustus, acute anceps ; spatha interdum longissima (10 cm.) nunquam brevis. Pedicellus erectus, elongatus, 40–90 mm. longus. Flos satis parvus, suberectus vel adscendens, verisimiliter alte luteus fere concolor ; perianthii tubo brevi latiusculo ; segmentis ovato-ellipticis vel ellipticis, imbricatis, ut videtur haud tortis, quam coronâ paulo brevioribus ; corona latiuscula, superne paulo dilatata margine obscure lobato leviter crenato. Capsula ovali-oblonga, obtuse trigona.

erect pedicels that are often of extraordinary length. It is evidently a member of the series *Lutei*, and is at once distinguished from every other species of the subgenus by the length of its spathe and pedicels.

It was found by REVERCHON in moist and shady places on calcareous ground at an altitude of about 5,500 feet on the Sierra de Cabrilla, which it is understood forms part of the Sierra de Cazorla, in the east of the Andalusian province of Jaen. REVERCHON remarks that it was the only form seen on the " Massif de la Malessa."

11. NARCISSUS OBVALLARIS Salisb. (fig. 3 H).

Narcissus obvallaris Salisb. Prodr. Stirp. 221 (1796) ; *N. Sibthorpii* Haw. in Trans. Linn. Soc. v, 243 (1800) ; *N. major* var. γ Ker in Bot. Mag. No. 1301 (1810), excl. syn. partim ; *Ajax obvallaris* Salisb. in Trans. Hort. Soc. i, 345 (1812) ; Haw. Narciss. Revis. 120 (1819) ; Mon. 3 (1831), pro parte ; *A. lobularis* Haw. in Phil. Mag. viii, 130 (1830), pro parte ; Mon. 3 (1831), pro parte ; *A. luteus* var. *obvallaris* Herbert, Amaryll. 304 (1837) ; *N. Pseudo-Narcissus* var. β Bertoloni, Fl. Ital. iv, 18 (1833–54) ? ; *N. Pseudo-Narcissus* var. *Bromfieldii* Syme, Eng. Bot. ed. 3, ix, 158 (1869) ; *N. obvallaris* hort. recent.

Pseudo-Narcissus luteus Hort. Eystt. 3rd Ord. f. 7 (1613).

Icones. Hort. Eystt., *l.c.* ; Bot. Mag. t. 1301 γ ; Reichb. Icones Fl. Germ. ix, f. 817, upper flower, as *N. major* ; Garden, lxiii, p. 245 ; Gard. Chron. (N.S.) xxi, f. 80c ; Butcher and Strudwick, Further Illust. No. 359.

Exsicc. Miller, sine loco, in Hb. Mus. Brit. ; Bree, Tenby and Buildwas, in Hb. Mus. Brit., as *N. lobulatus* (sic) ; Hance, No. 1967/2, Salzburg, in Hb. Mus. Brit., as *N. Pseudo-Narcissus* ; Pugsley, No. 468.

Bulb of moderate size, subrotund-ovoid, 25–35 mm. long, with pale brown scales. *Leaves erect*, 20–30 cm. long, glaucous, *flat* and not twisted, obscurely keeled, 8–10 mm. broad, slightly attenuate above, obtuse. *Scape* 20–30 cm. long, erect, more or less *stout*, 2-edged but not much compressed, coarsely striate. Spathe thick ; *pedicel slightly curved*, stout to rather slender, *10–15 mm. long. Flower of moderate size*, ascending or nearly horizontal, 35–45 mm. long (excluding ovary), *deep golden-yellow* and nearly concolorous except the perianth-tube more or less tinted green, slightly scented ; *perianth-tube short and broad*, 12–15 mm. long ; *perianth-segments broad* (inner narrower), ovate, obtuse, mucronate, *imbricated, spreading*, somewhat incurved and undulate but *not twisted*, shorter than the corona ; *corona broad*, more or less longitudinally plicate, *dilated above* with spreading or slightly reflexed margin (25–30 mm. across), *with six well-marked, rounded lobes*, which are sometimes irregularly or sparingly undulate-plicate-crenate and sometimes subentire. Filaments inserted about 3 mm. above base of perianth-tube. Anthers with minute dark apical spot. Style relatively longer than in *N. hispanicus*. *Capsule* 20–25 (rarely –30) mm. long, *narrowly oblong or oblong-obovoid*, subtruncate, *obscurely trigonous* with flattish sides and scarcely furrowed. Chromosome number 14 (Philp).

β. *maximus* var. nov.

Ajax maximus Haw. Mon. 3 (1831), excl. syn. ; Obs. in Phil. Mag. Ser. III, i, 276 (1832) ; *N. maximus* D. Don in Sweet, Brit. Fl. Gard. Ser. II, iii, No. 286 (1835), excl. syn. ; *N. major superbus* T. Moore in Gard. Mag. Bot. 169 (1851) ? ; N. ' Henry Irving,' hort. recent. ?

Pseudo-Narcissus major hispanicus De Bry, Floril. Nov. pl. 15 (1612) ; Passeus Hort. Florid. iv, No. 8 (1614) ; *Narcissus totus luteus montanus major* Hort. Eystt. 3rd Ord. f. 1 (1613).

Icones. De Bry, *l.c.* ; Hort. Eystt. *l.c.* ; Passeus, *l.c.* ; Sweet, *l.c.* t. 286.

Larger in all its parts *than the specific type*, with broad, flat leaves and stout, ribbed, slightly compressed scape, sometimes 50 cm. long. Pedicel short (about 10 mm. long). *Flower large*, 50–55 mm. long ; *perianth-tube short* (about 15 mm.) and broad ; perianth-segments elliptic-ovate, inner narrower, all rounded-obtuse and mucronulate, imbricated, erect-spreading and undulate, rather shorter

than the corona; *corona* broad and dilated above with spreading margin (35–40 mm. across), *with six obscure lobes*, deeply and irregularly incised-crenate, plicate, undulate, internally faintly transversely wrinkled. *Capsule* 20–25 mm. long, *broadly oblong or oblong-obovoid*, obscurely trigonous and furrowed. Otherwise as the type.

γ. *toscanus* var. nov.*

Exsicc. Groves, Prope Florentiam, 1876, in Hb. Kew., and 1885, in Hb. Mus. Brit. (type), as *N. Pseudo-Narcissus* (*A. major* Parl.).

Leaves 10–12 mm. broad, attenuate above. Scape (–30 cm. long) and pedicel rather stout, the latter curved, 10–15 mm. long. Corolla 40–55 mm. long; *perianth-tube* 15–20 mm. long, *rather broad*; perianth-segments ovate-elliptic, obtuse, mucronulate, not twisted, shorter than the corona; *corona* broad, *slightly expanded above* (about 30 mm. across), *with obscure, imbricate lobes* and plicate-crenate margin. Otherwise as in the type. [v.s.]

δ. *concolor* var. nov.

N. Pseudo-Narcissus γ *concolor* Bromf. Fl. Vect. ii. 497 (1856); *N. Pseudo-Narcissus* var. *Bromfieldii* Syme, Eng. Bot. ed. 3, ix, 158 (1869), ex parte.
Exsicc. Bromfield, Apse Farm, 1841, in Hb. Kew. and Hb. Manchester.

Scape stout; *pedicel very short* (5–7 mm.) and stout, sometimes nearly obsolete. Flower 35–45 mm. long; *perianth-tube about 17 mm. long*; perianth-segments broad and imbricated; *corona* broad, *obscurely 6-lobed*, with lobes more or less contiguous, plicate and strongly crenate. *Capsule subrotund-obovoid*, very obscurely trigonous. Otherwise like the type. [v.s.]

The forms brought together under *N. obvallaris* bear deep yellow, nearly concolorous flowers like *N. hispanicus*, but they differ in their generally lower stature, with flatter and less twisted leaves, less compressed scape, relatively broader and flatter perianth-segments, and broader and more simply cut corona. They represent the group *Lobato-coronae* of HAWORTH'S Monograph. The fruit of this species is more shortly pedicelled and less trigonous than in *N. hispanicus*.

SALISBURY'S original description of *N. obvallaris* (*l.c.*) runs "Corollae laciniis tubo ½-longioribus, rectis, ovatis, interioribus multo angustioribus, valde imbricatis; coronâ infundibuliformi basi cylindraceâ, 6-fidâ, repando-dentatâ, superne plicatâ," with *Pseudo-Narcissus luteus* Eystt. shown as a synonym; and he adds that he received the plant from CURTIS. In Trans. Hort. Soc. (*l.c.*) he gives as synonyms *N. major* γ of CURTIS' Bot. Mag. No. 1301, and *N. Sibthorpii* Haw. Neither CURTIS nor HAWORTH cites *N. obvallaris* in synonymy. HAWORTH, like SALISBURY, had this plant from CURTIS, who informed him that it was found wild in Oxfordshire by SIBTHORP. SALISBURY also states that it was received through SIBTHORP, but that it was not a wild plant; and he remarks that it had been called Bobart's Daffodil at Oxford and was probably introduced by the younger BOBART, as it is not mentioned in the second edition of the Catalogus Horti Oxoniensis published in 1658.

There is no figure of *N. obvallaris* in the collection of SALISBURY'S

* Folia 10–12 mm. lata, superne attenuata. Scapus pedicellusque (curvatus, 10–15 mm. longus) crassiusculi. Corolla 40–55 mm. longa; perianthii tubus 15–20 mm. longus satis latus, segmenta ovato-elliptica, obtusa, mucronulata, haud torta, quam corona breviora; corona lata, superne paulo dilatata, lobis obscuris imbricatis marginibusque plicato-crenatis praedita.

drawings at South Kensington, but there is a specimen there from Herb. Miller, marked in SALISBURY's handwriting "*obvallaris* Salisb. Prodr." This consists of two flowers, now badly damaged by insects, but it can be seen that the perianth-segments are broad and imbricated, and the corona broad with spreading, little cut lobes. It may be the plant figured in Bot. Mag. as *N. major* var. γ, but this is not certain, and in view of its present fragmentary condition, and as no other authentic example is known, it seems desirable to regard the figure (Bot. Mag. t. 1301, γ) as typifying *N. obvallaris* Salisb. There is another specimen in Herb. Mus. Brit. that seems to match the *N. obvallaris* of Herb. Miller, from Salzburg, where it was presumably cultivated.

In horticulture the name *obvallaris* has been applied to the Tenby Daffodil for many years. It is not quite clear how or when the practice arose, but it is perhaps connected with the use of the name *lobularis* for *N. nanus*, which was suggested to BARR from Kew in 1873. But in 1884 BAKER gave an account of the Tenby Daffodil as *N. lobularis* in Journ. Bot. xxii. p. 193; and there are specimens so named at Kew, taken from the Daffodil Conference of April 1, 1884, although contemporary horticultural lists show the Tenby Daffodil as *N. obvallaris*. The name *A. lobularis* originated with HAWORTH in 1830, as cited above, and his original diagnosis, which is supplemented by a lengthy description, runs thus: "Corollae laciniis luteis tubo obconico exacte duplo longioribus; coronâ perluteâ patulâ sexlobatâ (lobis integris) lacinias 3-lineas superante. . . . Obs. Prope *A. obvallarem* Salisb., cui maxime affinis certe locarem. Differt satis flore omni parte longiore. Novam speciem constituit; et forte affinior *A. spurio* nob. cum coronae lobis longissime integrioribus." The plant was received from the Rev. A. T. BREE and was said to grow at Truby, which was corrected to Tenby in the Monograph. There is a contemporary specimen in Herb. Borrer at Kew, labelled "*Ajax lobularis* Haworth, Wales. Mr. Bree, Mr. Sowerby, 1829," which is clearly the Tenby Daffodil. HAWORTH distinguishes his plant from *N. obvallaris*, and does not cite *N. major* var. γ of the Bot. Mag. either in the Philosophical Magazine or the Monograph. In the later work it is quoted under *N. obvallaris*.

A comparison of the Tenby Daffodil with the Herb. Miller specimen of *N. obvallaris* in Herb. Mus. Brit. shows that the two plants are much alike, but it may be doubted whether they are exactly identical, *N. lobularis* appearing a dwarfer, rather coarser plant with a shorter and broader flower. But the Tenby plant obviously matches *N. major* var. γ of the Bot. Mag. t. 1301, and hence there is good ground for regarding *N. obvallaris* Salisb. and *N. lobularis* Haworth as conspecific. It is noteworthy that at Tenby the normal plant grows mixed with numerous double and intermediate forms. An interesting account of this plant, with plates, by C. T. VACHELL ("Narcissi of South Wales"), may be found in Trans. Cardiff Naturalists' Society, xxvi. Pt. 2 (1894).

The variety *maximus* represents a larger form, having the general features of *N. obvallaris*, not known as a wild plant. DON'S account of it (as *N. maximus*) seems to agree with his plate, but RUDBECK'S plant cited (*N. totus luteus calice praelongo*) is a form of *N. hispanicus*, as is also *A. propinquus*. DON'S figure shows a strong likeness to the pre-Linnean plants cited above, which apparently represent a form grown in the Netherlands from an early date. It also recalls the *Pseudo-Narcissus simplex Belga* of the Hortus Eystettensis, which, however, is more probably the wild *N. Pseudo-Narcissus*. The modern garden Daffodil 'Henry Irving,' which certainly resembles DON'S figure, has been stated to be a native of the Netherlands, but is more probably, like 'Golden Spur,' a relic of former cultivation or possibly a resultant hybrid. It was discovered in a wild condition near Leiden, in Holland.

The variety *toscanus* is characterized by rather large flowers, with scarcely expanded and obscurely lobed corona; and the variety *concolor*, which is notable from having figured in botany, while it is not mentioned in horticulture, differs materially from the specific type in its longer perianth-tube, less distinctly lobed corona, and globose, almost subsessile capsules.

Ajax cambricus, of HAWORTH'S Monograph, p. 3, which is only very briefly described, is perhaps a form of this species allied to var. *toscanus*, but as HAWORTH furnished no synonyms and gave no indication of its origin beyond noting that it was a native of Wales, it is only possible to conjecture what its affinity may have been. No contemporary specimens are known to exist. There is a flower in Herb. Kew. of the plant that BARR considered to be *N. cambricus*. This has the appearance of a form of *N. hispanicus* or *N. confusus*, but is not really determinable.

It is notable that to none of the forms of this species has a Spanish origin been attributed. The specific type was at first thought to be wild in Oxfordshire. Later, as *A. lobularis*, it was found near Tenby, where it was abundant till collected by nurserymen and still grows in limited quantity. It was formerly known in other parts of Pembrokeshire and also in Salop, but its indigenity in Britain must be held doubtful. It would seem, however, by no means impossible that an endemic form of a group eminently Lusitanian in its distribution might occur in South Wales. The example in Herb. Mus. Brit. from Salzburg is probably a cultivated plant. The large-flowered variety *maximus* was long grown in Holland, where it was almost certainly introduced, and nothing appears to be known of its real origin. The variety *concolor* came from the vicinity of Shanklin, Isle of Wight, but as it grew in the neighbourhood of an old farm it was probably at some time planted. It is believed to have become extinct. The Italian variety *toscanus* is recorded from cornfields near Florence and may be a native plant in the valley of the Arno. A specimen from this region, received through BARR, is at Kew in addition to those cited above.

12. NARCISSUS PISANUS sp. nov.* (fig. 4A).

Exsicc. Billot, No. 468 ter, as *N. Pseudo-Narcissus* (type); Pugsley, No. 469.

Bulb of moderate size, ovoid, 25–30 mm. long, with thin, pale scales. *Leaves erect*, 20–25 cm. long, *flat* and not twisted, 6–10 mm. broad, attenuate above, obtuse. *Scape* 20–30 cm. long, erect, *rather slender and tapering above*, fairly compressed, 2-edged, finely striate. *Pedicel rather slender, suberect* or inclined, *short* (5–8 mm. long). *Flower of moderate size*, ascending or horizontal, 45–48 mm. long (excluding ovary), *clear yellow* with slightly deeper corona; *perianth-tube rather narrow*, 18–20 mm. long; *perianth-segments* ovate-elliptic, obtuse, mucronate, *imbricated below, erect-spreading, somewhat twisted*, a little shorter than the corona; *corona rather broad, a little dilated* and spreading *above*, with subplicate *margin divided into* six *rounded*, contiguous, subentire or crenulate *lobes*. Style and stamens longer than in *N. hispanicus*. Filaments inserted 3–4 mm. above base of perianth-tube. *Capsule* (immature) 15–18 mm. long, *oblong or oblong-obovoid*, nearly terete, scarcely furrowed.

This graceful Daffodil is allied to *N. hispanicus* and *N. obvallaris*, which it resembles in its bright yellow, nearly concolorous flowers. It differs from both, however, by its shorter pedicel and its relatively longer perianth-tube. *N. hispanicus* may be further distinguished by its taller growth, twisted foliage, larger and more deeply coloured flowers with strongly twisted perianth-segments, larger and more cut corona, and short style and stamens; *N. obvallaris* by its more robust habit, with stout scape and pedicel, and darker yellow flowers with broader and more spreading perianth. *N. longispathus* is readily separable owing to its tall, erect habit and elongate pedicels.

N. pisanus is an Italian plant that has been collected by BILLOT and other botanists on the slopes of Monte Pisano, in Tuscany, which seems to be a natural station where it is probably indigenous. There is also a specimen at Kew from the valley of the Arno (with both single and double flowers), received from BARR, which has the aspect of a luxuriant form of this species. In April 1927 I collected *N. pisanus* in grassland among the hills near Lugano, where it grew in the proximity of a deep yellow, double Daffodil, which is frequent in that district. This double Daffodil, though similar in flower, differs from the common "Telamonius plenus" seen in British gardens by its dwarfer growth and relatively slender scape and pedicel, and may well be the double form of *N. pisanus*. The species is probably widely distributed in Northern Italy.

13. NARCISSUS CONFUSUS sp. nov.†

Pseudo-Narcissus major hispanicus Clusius, Hist. ii, 165 (1601) ?; Sweert, Floril. i. Pl. 21, f. 2 (1612) ?; *Bulbocodium hispanicum* J. Bauh. Hist. ii, 594 (1651) ?

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* Folia erecta, plana, 6–10 mm. lata, superne attenuata. Scapus 20–30 cm. longus, superne gracilescens, tenuiter striatus. Pedicellus satis gracilis, suberectus, brevis. Flos mediocris, laete flavus; perianthii tubus paulo angustus; segmenta ovato-elliptica, inferne imbricata, erecto-patentia, paulum torta, quam corona paulo breviora; corona latiuscula, superne paulo dilatata, margine in lobos rotundatos, subintegros diviso. Capsula oblonga vel oblongo-obovoidea, fere teres.

† Planta robusta. Folia erecta, saltem 30–35 cm. longa, viridia, complanata, ad 14 mm. lata, obtusa. Scapus folia subaequans, crassiusculus, anceps. Pedicellus crassiusculus, suberectus, circa 10 mm. longus. Flos satis parvus, suberectus vel adscendens, aureus; perianthii tubus latiusculus; segmenta ovato-lanceolata vel lanceolata, inferne imbricata, adscendentia, plus minusve torta, coronam subaequantia; corona latiuscula, haud multo dilatata, obscure lobata. Capsula verisimiliter ovalis, vix trigona.

Exsicc. Lacaita, Nos. 25966 (type) and 25967, Sierra de Majareina, Estremadura, 1923, as *N. major*.

Plant robust. Bulb rather large, ovoid, 35–45 mm. long, with pale brown scales. *Leaves erect*, at least 30–35 cm. long, green, *flat*, up to 14 mm. broad, obtuse. *Scape* subequalling the leaves, erect, *rather stout*, compressed and sharply 2-edged. *Pedicel rather stout, suberect, about 10 mm. long. Flower rather small*, suberect or ascending, 40–45 mm. long (excluding ovary), *golden-yellow* and nearly concolorous; *perianth-tube rather broad*, 15–18 mm. long; *perianth-segments* ovate-lanceolate or lanceolate, cuspidate or acute, *imbricated below, ascending, more or less twisted*, nearly equalling the corona; *corona rather broad, not much dilated* or spreading *above*, generally *obscurely lobed*, with plicate, imbricated, crenate-dentate margin. Style relatively longer than in *N. hispanicus*. Filaments inserted 3–4 mm. above base of perianth-tube. *Capsule* (immature only seen) at least 15 mm. long, apparently *oval*, scarcely trigonous. [v.s.]

N. confusus is allied to *N. hispanicus*, more particularly to the variety *spurius*, but it differs in its broader, greener and flatter leaves, and smaller, more shortly pedicelled flowers, with less lobed and cut corona, and relatively longer style. It also recalls *N. obvallaris*, which may be known by its dwarfer habit (excepting var. *maximus*), less erect pedicel, broader, spreading perianth-segments, and broader, more lobed or incised corona. *N. longispathus* is readily distinguished by its tall habit, with small, broad flowers borne on extremely long, erect pedicels. The Italian *N. pisanus* is a smaller and slenderer plant, with narrower leaves and lighter yellow flowers with an elegantly lobed corona.

This species is probably the prevalent Daffodil of Central Spain. It appears to be CLUSIUS' *Pseudo-Narcissus major hispanicus*, a native of Old Castile, which has been commonly but erroneously identified with *N. hispanicus* Gouan—an erroneous identification noticed by RAY (Hist. ii. 1130), who, under *N. hispanicus*, omits the citation from CLUSIUS and remarks, "flower far larger than in the Common Daffodil, hence we wonder that Clusius says smaller." SALISBURY (Trans. Hort. Soc. i. 346) also notices this discrepancy, and cites the plant of CLUSIUS as a synonym of *A. obvallaris*. CLUSIUS first mentions the occurrence of his Spanish Daffodil in meadows and damp places in Old Castile in 1576 (Rar. Stirp. Hisp. Hist. p. 255), and in his subsequent Historia (ii. p. 165) he compares it with the Common Daffodil, stating that its bulb is thicker, its leaves greener and far larger, its stem taller, and its flower a little smaller, with the perianth and corona of a uniform yellow or golden colour. From this account it will be seen that the plant of CLUSIUS cannot possibly be *N. hispanicus* Gouan, but agrees remarkably closely with *N. confusus*, as described above from Mr. LACAITA'S specimens. These specimens were obtained in mountain pastures in Estremadura, a remote region where botanizing is not easy. Other material, *e.g.* WILLKOMM'S No. 834, Sierra de Yunquera, N.E. Granada, may also be a form of *N. confusus*, but the examples at Kew and in Herb. Mus. Brit. are too fragmentary for determination. As suggested under *N. hispanicus*, the Common Double Daffodil of English gardens, to which a Spanish origin was first attributed, may possibly belong to this species.

14. NARCISSUS PORTENSIS sp. nov.*

N. Pseudo-Narcissus f. *stenantha* Lge. Diag. Pl. III in Overs. Vidensk. 193 (1893) ? ; Willk. and Lge. Fl. Hisp. Suppl. 323 (1893) ?

Exsicc. Tait, Oporto, 1886, in Hb. Mus. Brit. (type) and Hb. Kew., as *N. Pseudo-Narcissus* var. *minor* ; Gadeceau, Oporto, 1905, and cult. 1907, in Hb. Mus. Brit., as *N. obvallaris* ? and *N. abscissus* ? ; James, Arzina, Galicia, 1926, in Hb. Lacaita (No. 28949) as *N. hispanicus.*

Bulb rather small, subrotund, 25–30 mm. long, with pale brown scales. *Leaves suberect*, 8–12 cm. long, glaucous, *nearly flat*, about 6 mm. broad, obtuse, attenuate above, *much shorter than the scape*. *Scape* 12–20 cm. long, suberect, *slender*, compressed and 2-edged, finely striate. *Pedicel slender, curved above, rather short* (5–15 mm. long). *Flower of moderate size or rather small*, horizontal or ascending (penchée ap. Gadeceau), 40–55 mm. long (excluding ovary), *golden-yellow* and concolorous (ap. Gadeceau) with perianth-tube shaded with green and green median nerves to the segments ; *perianth-tube long* (16–22 mm.), *narrowly obconical* ; *perianth-segments narrow*, linear-lanceolate, lanceolate-subulate or lanceolate, acute, generally slightly imbricated below, apparently suberect, more or less waved, *distinctly shorter than the corona* ; *corona large, straight*, gradually dilated upwards and without apical expansion (somewhat *obconical* or funnel-shaped), longitudinally plicate, the *subtruncate margin* very obscurely and obtusely 6-lobed or shortly incised-crenulate. Filaments inserted 4–5 mm. above base of perianth-tube. *Capsule* (immature only seen) apparently rather narrow, *oblong-obovoid*. [v.s.]

This Daffodil, which differs widely from the other species of the *Lutei* and is placed in this series with some doubt, is remarkable for its small, narrow perianth-segments and large, funnel-shaped corona, which, with its inclined flowers, give it something of the aspect of a Bulbocodium.

The plant has not been identified with any of the clipt-trunk Daffodils of the pre-Linnean writers and was not known to the generation of HAWORTH. The present description is based on specimens sent by A. W. TAIT from near Oporto and Povoa de Lanhozo to the Natural History Museum and to Kew, on others that were transmitted later by E. JOHNSTON to GADECEAU, who was puzzled over the plant's affinities, and on Galician material in Mr. LACAITA'S Herbarium. JOHNSTON forwarded small- and larger-flowered specimens from natural habitats and cultivated ground respectively, and GADECEAU was disposed to assign the former to *N. minor* or *N. abscissus*, and the larger to *N. obvallaris*. At the same time he remarked the superficial resemblance to a Bulbocodium. Although there is a marked difference in the development of the flowers, all of these specimens, as seen when dry, appear to be states of one species, which has not hitherto been described, and which, by the form of its perianth and corona, is separable alike from *N. minor*, *N. abscissus* and *N. obvallaris*. There is also in Herb. Manchester a specimen from Sierra de Cintra (WELWITSCH, Fl. Lusit. No. 996, as *Narcissus* ?) which probably belongs to *N. portensis*. It shows similar short and narrow foliage, but the perianth-

* Folia suberecta, glauca, fere plana, circa 6 mm. lata, superne attenuata, quam scapus multo breviora. Scapus 12–20 cm. longus, gracilis, tenuiter striatus. Pedicellus gracilis, superne curvatus, breviusculus. Flos mediocris vel satis parvus, horizontalis vel adscendens, aureus ; perianthii tubus longus, anguste obconicus ; segmenta angusta, lanceolata, acuta, quam corona plane breviora ; corona magna, recta, superne sensim dilatata, infundibuliformis, margine subtruncato obscurissime 6-lobato vel breviter inciso-crenulato. Capsula oblongo-obovoidea.

segments, though short, are elliptical and imbricated. COUTINHO [Fl. Portugal, 141 (1913)] gives a form *concolor* of *N. Pseudo-Narcissus*, which is perhaps intended to include this plant, but no point of distinction is mentioned other than the uniformly yellow flower.

No material has been seen of LANGE'S form *stenantha* of *N. Pseudo-Narcissus*, shown above in the synonymy of *N. portensis*, but judging from the description (*l.c.*), " Flore suberecto, perigonii laciniis linearilanceolatis coronâ obconicâ v. infundibulari crenatâ conspicue brevioribus," it appears to be identical with *N. portensis* in its essential features. Its recorded habitat is the Sierra de Guadarrama, where it was noticed in 1892, and it would thus seem likely that the range of the species extends from Galicia, Oporto and perhaps Lisbon eastwards across Portugal to the neighbourhood of Madrid.

15. NARCISSUS NEVADENSIS sp. nov.*

Exsicc. Lofthouse, Dornajo, Sierra Nevada, Prov. Granada, 1931, in Hb. Mus. Brit.

Plant dwarf. Bulb not seen. Leaves 12–15 cm. long, green, nearly flat, 5–6 mm. broad, obtuse, slightly attenuate above. Scape 15–25 cm. long, erect, compressed, plainly 2-edged. Spathe very long (up to 50 mm.). *Pedicel very long* (–28 mm.), *erect but curved at the extreme apex. Flower small*, suberect or ascending, 30–38 mm. long (excluding ovary), apparently *full yellow with golden corona*; *perianth-tube long* (about 18 mm.), *subequalling or even exceeding the corona*; *perianth-segments* oblong-lanceolate, acute or mucronate, slightly imbricated below, ascending, not twisted, *subequalling the corona*; *corona short, broad, straight, subtruncate*, with margin not expanded or lobed but irregularly undulate-crenate or slightly lobulate. Filaments inserted 4–5 mm. above base of perianth-tube. Style rather long. *Capsule* (immature only seen) about 12 mm. long, *oval*, apparently not trigonous. [v.s.]

In its long, erect pedicels *N. nevadensis* recalls *N. longispathus*, which was found at a similar altitude in the adjoining province of Jaen, but not only is it a plant of dwarf instead of luxuriant growth, but its flowers are widely different by their long perianth-tube and subtruncate corona, and resemble most closely those of *N. portensis*. It is not certain, in the absence of better material, what is the plant's closest affinity, but it appears to be allied both to *N. portensis* and *N. longispathus*, and to be best placed in the series *Lutei* despite its dwarf growth and small flowers.

The above description is based on limited material collected by Mr. LOFTHOUSE on April 6, 1931, on stony ground above Cortijo, near Monachil, in the district of Dornajo, Prov. Granada, at an altitude of 5–6000 feet. The discovery is of great interest, for hitherto no true Daffodil has been found in the Sierra Nevada. Mr. LOFTHOUSE was unfortunately unable to obtain bulbs, and of the three scapes which were preserved one bears two flowers. This is perhaps only an abnormality.

* Planta nana. Folia viridia, satis complanata, 5–6 mm. lata, apice attenuata. Scapus 15–25 cm. longus, anceps; spatha longissima (ad 50 mm.). Pedicellus longissimus (ad 28 mm.), erectus, apice ipso curvatus. Flos parvus, suberectus vel adscendens, ut videtur coronâ aureâ saturate luteus; perianthii tubus longus, coronam subaequans; segmenta oblongo-lanceolata, coronam subaequantia; corona brevis, lata, recta, subtruncata, margine nec expanso nec lobato. Capsula ovalis, verisimiliter haud trigona.

The figure of *N. hispanicus tubâ non fimbriatâ* of RUDBECK's Camp. Elys. (p. 73, f. 15), on which HAWORTH's *Oileus pumilus* is partly founded, somewhat resembles *N. nevadensis*.

Series III. *Vulgares.**

Flowers of moderate size or rather large, yellow, straw-coloured or bicoloured, with the flowering pedicel very short and deflexed. Capsule broadly oval, subglobose or obovoid.

16. NARCISSUS PSEUDO-NARCISSUS Linn. (fig. 4c).

Narcissus Pseudo-Narcissus Linn. Sp. Pl. 289 (1753); Eng. Bot. No. 17 (1790); Willk. and Lge. Fl. Hisp. i, 151 (1861); Baker, Amaryll. 3 (1888); Aschers. and Gräbn. Syn. Mitteleurop. Fl. iii, 371 (1905–7); Rouy, Fl. France, xiii, 29 (1912); *N. festalis* Salisb. Prodr. Stirp. 220 (1796); *Ajax festalis* Salisb. in Trans. Hort. Soc. i, 347 (1812); Haw. Narciss. Revis. 113 (1819); *Ajax Pseudo-Narcissus* Haw. Mon. 2 (1831); Herbert, Amaryll. 300 (1837).

Narcissus totus luteus montanus Theophr. Lobel, Stirp. Adv. 50 (1570); Stirp. Hist. 61 (1576); *N. luteus sylvestris* Dod. Pempt. 227 (1583); *N. totus luteus* Camer. Epit. 953 (1586); *Pseudo-Narcissus anglicus* Gerard, Herb. 115 (1597); id. ed. 2, 132 (1633); *Pseudo-Narcissus vulgaris* Clusius, Hist. ii, 164 (1601); *P. minor germanicus* Sweert, Floril. i, pl. 21, f. 3 (1612); *P. simplex Belga* Hort. Eystt. 3rd Ord. f. 6 (1613); *N. sylvestris pallidus calice luteo* C. Bauhin, Pin. 52 (1623); Ray, Hist. 1131 (1688); Rudbeck, Camp. Elys. 70, f. 8 (1701); *P. anglicus vulgaris* Park. Par. 100 (1629); *Bulbocodium vulgatius* J. Bauhin, Hist. ii, 593 (1651); *N. sylv. pallidus tuba lutea minor vulg.* Barrel. Pl. Obs. No. 929 (1714).

Icones. Gerard, Herb. ed. 2, *l.c.*; Rudbeck, Camp. Elys. *l.c.*; Barrel. *l.c.* No. 929; Eng. Bot. t. 17; Herbert, *l.c.* pl. 43, f. 3, as *A. festalis*; Bulliard, Herb. France, ix, t. 389; Fl. Danica, t. 2170; Baxter, Br. Bot. i, t. 73.

Exsicc. E. Foster, Low Leyton, 1799, in Hb. Mus. Brit.; Billot, No. 50; Godron, Nancy, 1846, in Hb. Kew.; Gay, Bois de Vincennes, 1861 and 1863, in Hb. Kew.; Monheim, Aachen, in Hb. Mus. Brit.; Murray, Val d'Illiez, 1896, in Hb. Mus. Brit.

Bulb rather small, ovoid, 20–30 mm. long, with brownish scales. *Leaves erect*, 12–35 cm. long, *glaucous*, usually somewhat channelled, 6–12 mm. broad, attenuate above, obtuse. Scape 20–35 cm. long, erect, equalling or slightly exceeding the leaves, generally rather slender, moderately compressed, 2-edged, usually distinctly striate. *Pedicel* rather slender, *strongly deflexed, very short* (3–10 mm. long). *Flower small to rather large*, drooping or nearly horizontal, 35–60 (commonly about 45) mm. long (excluding ovary), *sulphur-yellow* or cream-coloured, *with* perianth-tube generally tinged with green and *bright yellow corona*, occasionally deeper towards the margin, strongly scented; *perianth-tube long* and rather narrow, 15–22 mm. long, occasionally nearly equalling the corona; *perianth-segments oblong-lanceolate to ovate-lanceolate or elliptic*, obtuse-mucronate, acute or more rarely acuminate, more or less imbricated below, ascending over the corona, waved and in well-grown plants often more or less spirally twisted, usually about as long as the corona but occasionally longer; *corona straight, scarcely expanded* or spreading at the margin, *without distinct lobes but cut irregularly into numerous* short, dentate (more rarely crenate or serrate) and subimbricate *lobules*, strongly plicate above and finely transversely rugulose within. Filaments inserted 3–4 mm. above base of perianth-tube; anthers without dark apical spot. Style shortly exceeding stamens. *Capsule* 12–25 mm. long, *obovoid or subrotund*, or rarely oval-ellipsoid, very obtuse or subtruncate, *roundly trigonous* or nearly terete, often furrowed and *generally rugose*. Chalazal end of seed strongly appendiculate. Chromosome number 14 (Philp).

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* Flores mediocres vel majusculi, lutei, straminei vel bicolores, pedicello florifero brevissimo deflexo. Capsula late ovalis, subrotunda vel obovoidea.

f. *lutescens* forma nova.*

Exsicc. Pugsley, No. 484.

Leaves 6–8 mm. broad. Flower rather large, 40–60 mm. long, with *perianth*-tube suffused with green and *clear yellow*, elliptic or lanceolate *segments* sometimes *nearly concolorous* with the corona. Corona generally rather broader than in the type, with more regularly rounded lobes and less plication.

β. *platylobus* var. nov.

A. platylobus Jordan, Icones Fl. Europ. iii, 2 (1903).
Icon. Jordan, *l.c.* t. 359.

Leaves 10 mm. broad. Flower about 50 mm. long; *perianth-segments* patent-ascending, imbricated below, *relatively broad*, ovate-elliptic, obtuse-mucronate; *corona rather broad, with margin* somewhat spreading, *unequally incised*, crenate-dentate. Capsule 20 mm. long, 6-furrowed but not trigonous. Otherwise as in the type. [n.v.]

γ. *festinus* var. nov.

A. festinus Jordan, *l.c.* 2 (1903).
Icon. Jordan, *l.c.* t. 360.
Exsicc. Reverchon, Briançon, 1868, in Hb. Kew. and Hb. Manchester.

Plant dwarf. Leaves narrow (about 7 mm. broad), *very glaucous. Flower* horizontal, rather small (40–45 mm. long), *with longer pedicel* than in the type; *perianth-segments oval*, subobtuse, imbricated; *corona deep yellow, with* abruptly *dilated*, spreading, crenate-lobate *margin*. Capsule about 20 mm. long, oblong (relatively narrow), obtusely trigonous. [v.s.]

δ. *porrigens* var. nov.

A. porrigens Jordan, *l.c.* 3 (1903).
Icon. Jordan, *l.c.* t. 361.

Plant dwarf. Leaves narrow (about 6 mm. broad), *very glaucous*, attenuate above. Flower horizontal, rather small (about 40 mm. long); *perianth-segments oblong* or lanceolate, apiculate, not imbricated, twisted; *corona deep yellow, with expanded*, spreading, distinctly lobed and crenate *margin*. Capsule 15 mm. long, oblong-ellipsoid, obtusely trigonous. [n.v.]

ε. *montinus* var. nov.

A. montinus Jordan, *l.c.* 3 (1903).
Icon. Jordan, *l.c.* t. 362.
Exsicc. Rel. Mailleanae, No. 1722.

Leaves longer than the scape, about 8 mm. broad. Flower horizontal, 40–55 mm. long, with perianth-tube 20–25 mm. long and segments spreading, oval-elliptic, obtuse-mucronate; *corona with expanded margin, deeply divided into* six unequally crenate *lobes*. Capsule ellipsoid, slightly trigonous. [v.s.]

ζ. *minoriformis* var. nov.†

Exsicc. Fourcade, Mail du Cric, in Hb. Mus. Brit., as *N. minor* (type); Durieu, Mail du Cric, 1861, in Hb. Kew., as *N.* ——.

Plant dwarf. Bulb small, 20 mm. long. Leaves generally 2, 10 cm. long, 5 mm. broad. *Scape* 10–15 cm. long, *very slender. Pedicel nearly obsolete. Flower* about 40 mm. long, *pale yellow, nearly concolorous*; perianth-tube 18 mm. long; *perianth-segments narrow*, lanceolate, a little shorter than the corona; corona with erect, irregularly serrate-dentate margin. Otherwise like the type. [v.s.]

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* Folia 6–8 mm. lata. Flos majusculus, 40–60 mm. longus; perianthii tubus viridescens, segmenta elliptica vel lanceolata laete lutea nonnunquam cum coronâ fere concoloria; corona saepius quam typi paulo latior lobulis magis rotundatis minus plicata.

† Planta nana. Folia saepissime bina, 5 mm. lata. Scapus 10–15 cm. longus, gracillimus. Pedicellus fere obsoletus. Flos circa 40 mm. longus, pallide luteus, fere concolor; perianthii tubus 18 mm. longus, segmenta angusta, lanceolata, quam corona paulo breviora; coronae margo erectus, irregulariter serrato-dentatus.

η. *humilis* var. nov.*

N. scoticus hort. recent., non *A. festalis* var *scoticus* Haw.
N. sylvestris pallidus calice longo luteo minor Rudbeck, Camp. Elys. 71, f. 8 (1701).
Icon. Rudbeck, *l.c.*

Plant dwarf. Leaves (6–8 mm broad) and scape 10–25 cm. long. *Flower small,* horizontal, 35–40 mm. long; *perianth-segments whitish, more or less spreading*; *corona* yellow, *irregularly serrate.* Otherwise as in the type.

θ. *insignis* var. nov.†

Exsicc. Pugsley, No. 487.

Flower 40–55 mm long, *with broader perianth-tube and corona than in the type*; perianth-tube often suffused with deep yellow instead of green; *perianth-segments* cream-coloured, *broadly ovate to elliptic-lanceolate,* the inner narrower, all mucronate and *strongly imbricated*; *corona* broad and dilated at the margin (25–30 mm. across), *variously crenate-lobate,* less plicate than in the type. Capsule less obovoid than in the type, nearly terete, not rugose.

N. Pseudo-Narcissus was the only Daffodil distinguished by LINNAEUS in the first edition of Species Plantarum (p. 289), and there is little doubt respecting the plant intended although it is represented in his Herbarium solely by a double flower in rather poor condition. LINNAEUS' brief diagnosis ("N. spatha uniflora, nectarii limbo campanulato erecto petalo æquale"—slightly modified in edition 2) is of less importance than the two synonyms cited from C. BAUHIN and DODONAEUS, or the habitat which he gives "In Angliæ, Hispaniæ, Italiæ nemoribus." The plant of C. BAUHIN's Pinax, *N. sylvestris pallidus calice luteo,* which LINNAEUS cites, was generally recognized by pre-Linnean authors as the light yellow Daffodil commonly found over a large part of Western Europe. It had already been independently named in Britain by GERARD, and later by PARKINSON, and it is of special interest to recall that CLUSIUS and J. BAUHIN (*l.c.*) mention it as growing commonly round London, and that the flowers were sold in plenty by countrywomen in Cheapside, where the taverns were decorated therewith. A still earlier reference to its occurrence in England may be found in LOBEL's Stirp. Adv. Nov. p. 50 (1570). There is an early specimen in the Sloane Herbarium (H.S. 312, f. 56, No. 1) under C. BAUHIN's name. RAY (*l.c.*) follows C. BAUHIN in designating the plant, and identifies with it the *Pseudo-Narcissus anglicus* of GERARD, and the *P. anglicus vulgaris* of PARKINSON. RUDBECK, who figured it (*l.c.*), likewise knew it under the same name. There is also the figure by BARRELIER (*l.c.*). No reasonable ground therefore exists in this case for questioning the application of the Linnean name.

In 1796 SALISBURY (*l.c.*) proposed the name *N. festalis* for a plant of which he gave as synonyms *N. Pseudo-Narcissus* Shaw in Eng.

* Planta nana. Folia (6–8 mm. lata) scapusque 10–25 cm. longi. Flos parvus, horizontalis, 35–40 mm. longus; perianthii segmenta albida, subpatentia; corona lutea, irregulariter serrata.

† Perianthii tubus latus saepe alte luteo-tinctus potiusquam viridescens: segmenta lactea, late ovata ad elliptico-lanceolata, valde imbricata: corona lata, margine dilatato varie crenato-lobato. Capsula quam typi minus obovoidea, fere teres, haud rugosa.

Bot. 17; *N. bicolor* L. Sp. Pl. ed. 2, p. 415; and *Pseudo-Narcissus anglicus vulgaris* Park. This confused *N. Pseudo-Narcissus* with *N. bicolor*; and in Trans. Hort. Soc. (*l.c.*) SALISBURY corrected it by removing *N. bicolor* from the synonymy and substituting C. BAUHIN'S name from RAY'S Historia. *N. festalis* was thus left a still-born name for *N. Pseudo-Narcissus* L. There is an authentic specimen in Herb. Mus. Brit. of *N. festalis*, written up by SALISBURY, consisting of two small plants that may belong to the variety *humilis*.

Another species and some varieties that appear to belong to *N. Pseudo-Narcissus* were created by HAWORTH. In Dissertationes, p. 179 (1803), *N. serratus* will be found, based on a plant seen in an old garden in Hackney. The distinguishing features are flat, rather broad leaves and a "nectarium luteum apice recto inaequaliter serrato vel subinciso." In the Revisio it is said to grow at Mill Hill and to be evil-smelling, although possessing a sweet-scented variety, *suavis*, that grew sparingly with it. The account ends with the remark that it is perhaps a mere variety of *A. Pseudo-Narcissus*, but certainly larger and later in flowering. In the Monograph the description is abbreviated, but a second variety is added, *radians*, from its "subregulariter valde radianter serrata" corona. This variety was an earlier-blooming plant. HERBERT does not include *N. serratus* in his Amaryllidaceae, and as no synonyms were cited in either of HAWORTH'S accounts, it remains a matter of conjecture how far the plant was essentially different from *N. Pseudo-Narcissus*. There is a specimen in Herb. Mus. Brit., from E. FOSTER'S Herbarium (1849), labelled "*N. serratus*, Mill Hill, Mr. Chambers," which seems to be ordinary *N. Pseudo-Narcissus*. ROUY (*l.c.*) shows β *serratus* nob. under his subspecies, *N. silvestris* (Lamk.), with the synonym *N. serratus* Haw. The short description, however, does not seem particularly to characterize the variety as originally diagnosed, and a further synonym cited, *N. Pseudo-Narcissus* b. *grandiflorus* Lagr.-Foss. Fl. Tarn-et-Garonne, p. 382, apparently refers to a form of *N. hispanicus* Gouan.

In his Revisio HAWORTH also inserts under *A. festalis* (*N. Pseudo-Narcissus* L.) a variety *scoticus*, which came from Scotland and is notable for its "corona lutea ore magno expanso inciso-crenato." This variety is transferred to *A. lobularis* in the Monograph, where HAWORTH mentions that he had examined only one example. As the varietal name is founded on a meagre description, unsupported by synonyms or *exsiccata*, it cannot be taken up, and the plant intended does not seem to be identical with the form more recently sold by nurserymen as "scoticus," which is described above as var. *humilis*.

HAWORTH'S Monograph contains three further varieties under *A. Pseudo-Narcissus*, viz. α *pallidus*, β *albis* (*sic*), and γ *luteus*, which represent only colour variations; and the diagnoses of α and γ are identical. Another variety, *ryticarpus* (capsulis rugosis), is included in HAWORTH'S Monograph, Ed. 2, but this appears to be nothing more

than a state, very frequently seen in this species, in which the capsules are rugose instead of smooth—a feature that I have not observed in any other Daffodil except *N. nanus*.

In 1854 a late-flowering form of *N. Pseudo-Narcissus*, growing at Vrine, near Pontarlier, was named *N. Renaudii* by BAVOUX in Mém. Soc. Emul. Doubs, Sér. II, iv. 119. This was said to differ from ordinary *N. Pseudo-Narcissus* by its less trigonous fruits, with seeds of a different shape, but the plant does not appear to have been further described.

A number of Daffodils are carefully described and well figured with dissections in the posthumous third volume of A. JORDAN'S Icones ad Floram Europae, published in 1903. Most of these are wild French plants and all of them are treated as separate species. Several are closely allied to *N. Pseudo-Narcissus* L., which, as might be expected in a widely spread species, is eminently polymorphic. The variability of the plants of the group *Vulgares* was noted long ago by PARKINSON, who suggested a name *Pseudo-Narcissus pyrenaeus variformis* to cover some of the Pyrenean forms. There are many such Daffodils, probably mostly wild plants, on the mound at Kew. It is clear from herbarium material that numerous races or strains of Daffodils of this group occur in France, and probably also in Spain, that differ only in minor characters from the average Linnean species, *N. Pseudo-Narcissus*, as described above. The points of distinction between such plants, though real and perhaps constant, often cannot be regarded as of specific value, and four of JORDAN'S species have accordingly been reduced here to varieties of *N. Pseudo-Narcissus*. This has been done with some confidence, for the descriptions and plates together furnish fairly complete accounts of the plants, very different from the meagre notes, sometimes supported by synonyms or contemporary specimens but often with none, by which the names of HAWORTH and HERBERT have to be determined.

In Britain, likewise, the species in different localities seems to show more than simple individual variation. In Derbyshire and South Scotland a distinct, dwarf form is found with small, lightish flowers with somewhat spreading perianth and serrated corona. This has been sold by nurserymen in recent years as *N. scoticus*. In north-west Herefordshire a deeply coloured form with rather large flowers was collected and distributed (LEY, Eardisley, 1901) as *N. Pseudo-Narcissus* var. *lobularis* (Haw.), which it sometimes approaches in colour. Near Ross another large-flowered plant has been collected by Miss ARMITAGE, with a broad flower recalling *N. bicolor* but the long perianth-tube of *N. Pseudo-Narcissus*. With this plant, which has been distinguished as var. *insignis*, a curious form was found in moderate quantity in which the flower was normal, but the spathe not wholly membranous, its margin being green and herbaceous and its base tending in the same direction.

There is considerable variation apart from these more distinct forms. Woodland specimens are generally taller, with narrower

leaves and often paler flowers, than plants of open meadows. In some stations, where the species grows in profusion, there is a remarkable uniformity in its floral characters; in others the form of the perianth differs greatly in different individuals, as does also the marginal cutting of the corona. A large batch of specimens received from a single station in Herefordshire included flowers with broad and with narrow perianth-segments, with narrow, almost laciniate-fimbriate coronas and with broad, simply crenulate ones; some flowers were much more concolorous than others; and among them was a solitary example with a relatively short perianth-tube, markedly bicoloured flower, and spreading corona, which, seen alone, might have been supposed to belong to another species! There is also considerable variation in the form of the fruit. It may thus be seen how necessary it is to consider the ensemble of characters when attempting to determine the real status of any of these plants.

As might be expected, *N. Pseudo-Narcissus* is by far the most widely spread species of the Subgenus Ajax. According to NYMAN its range extends from Portugal across Europe to Central Germany, Austria, Hungary, Transylvania, Croatia and Dalmatia, while it also occurs naturalized in North Germany, Denmark and South Sweden. This range needs some curtailment. *N. Pseudo-Narcissus* is widely distributed as a native plant in France, whence it extends to England, Belgium, Germany (west of the Rhine), Switzerland, Northern Italy, and apparently the Tyrol, for there are specimens in Herb. Kew. from Stans, received from KERNER, who thought the plant spontaneous. In the Iberian Peninsula the distribution of this species is little known, for it has not been generally distinguished from *N. macrolobus* or *N. nobilis*. An example at Kew from La Granja (ELLMAN and HUBBARD, No. 1089) seems referable to *N. Pseudo-Narcissus*, as does also some of the Portuguese material sent out by GRAELLS. Beyond this range Daffodils are reported only as naturalized plants in the Floras of Austria, Hungary, Transylvania and Croatia; and it is likely that they are old garden plants distinct from the restricted *N. Pseudo-Narcissus*. The most eastern specimens that I have examined are from Salzburg (*N. obvallaris*), and from Kreutz, in Croatia (SCHLOSSER)—a form near *N. bicolor* var. *lorifolius*. In VISIANI'S Flora Dalmatica *N. Pseudo-Narcissus* is recorded for stony, sunny places at Breno, south of Ragusa. This record indicates a natural habitat, which would be of much interest, but when at Ragusa in the spring of 1930 I was unable to find the plant or learn anything about it locally, although I visited Breno for this explicit purpose. I have not yet been able to see any specimens from this station.

In Britain *N. Pseudo-Narcissus* is widely distributed throughout England, but in Scotland naturalized Daffodils only are apparently to be found. The form introduced at Blair Castle, Perthshire, which is represented at Kew, is *N. Pseudo-Narcissus*. DRUCE'S Plant List gives twenty Irish vice-counties for this species, but PRAEGER and other Irish authorities do not admit it as a native of Ireland, and it is

not known whether any of the naturalized Daffodils of that country are really *N. Pseudo-Narcissus*.

Of the varieties, β *platylobus* was recorded by JORDAN from Lorraine (Dept. Vosges); γ *festinus* from Dauphiny (Dept. Isère) (it also occurs in Hautes-Alpes); δ *porrigens* from the neighbourhood of Lyons; and ε *montinus* from Mt. Pilat, in Dept. Loire. There are specimens in Herb. Manchester from Basle (FIESCHER, 1838), and from Bex (MEISSNER), that approach the first-named variety. The variety *minoriformis*, readily separable from *N. minor* by its short pedicel, grows in the Central Pyrenees, and also near Grasse, in the Maritime Alps, whence specimens were sent to GAY. These are discussed under *N. minor*. The variety *humilis* is a British plant that grows in Derbyshire and other counties in northern England, and is believed to have been naturalized in some spots in southern Scotland. The last variety, *insignis*, is described from the neighbourhood of Ross, in Herefordshire, and is known to grow also at Dymock, in Gloucestershire.

17. NARCISSUS PALLIDIFLORUS sp. nov. (figs. 4B, 14).*

N. pallidus praecox Barr in litt. in Hb. Kew. (1889); et hort. recent.
Pseudo-Narcissus pallidus praecox Park. Par. 99 (1629); *N. tot. alb. nutans ampla tuba* Barrel. Pl. Obs. No. 953 (1714)?
Icones. Garden, xxv, p. 185 (as *N. pallidus praecox*); Nicholson, Dict. Gard. ii, f. 644 (as *N. pallidus praecox*).
Exsicc. Barr, Bayonne, 1889, in Hb. Kew., as *N. pallidus praecox.*

Bulb rather small, subrotund, about 25 mm. long, with pale brown scales. *Leaves erect*, 15–30 cm. long, *more or less glaucous*, flat, 6–10 mm. broad, obtuse, slightly attenuate above. Scape erect, subequalling leaves in length, rather stout and not much attenuate above, little compressed and obscurely 2-edged, coarsely striate. *Pedicel* not slender, *strongly deflexed, very short*, 5–8 (rarely –10) mm. long. *Flower of moderate size*, drooping or horizontal, 45–55 (rarely –60) mm. long (excluding ovary), *cream- or straw-coloured*, with slightly deeper corona and perianth-tube suffused below with soft yellow, nearly scentless; *perianth-tube 16–20 mm. long*; *perianth-segments broadly oval*, imbricated below, obtuse-mucronulate or subacute, erect-spreading, more or less twisted, equalling or slightly shorter than the corona; *corona* rather broad, *abruptly dilated, spreading and recurved at its mouth* (about 30 mm. across), *which is 6-lobed*, sometimes more or less obscurely; lobes irregularly and usually sparingly incised and plicate with obscurely crenate, undulate margin. Filaments inserted 3–4 mm. above base of perianth-tube; anthers without dark apical spot. *Capsule* 20–25 mm. long, *subrotund-oval* or subrotund, *not trigonous*, with obscure broad and shallow furrows, *not rugose*. Chalazal end of seed obscurely appendiculate. Chromosome number 15 (Philp).

f. *asturicus* forma nova.†

N. asturicus Barr in litt. in Hb. Kew. (1889).
Exsicc. Barr, Asturias, 1889, in Hb. Kew., as *N. asturicus.*

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* Folia erecta, 15–30 cm. longa, glauca, plana, 6–10 mm. lata. Scapus foliis subaequilongus, satis crassus, grosse striatus. Pedicellus valde deflexus, brevissimus. Flos mediocris, nutans, lacteus vel stramineus coronâ paululum saturatiore tuboque basin versus flavescente; perianthii segmenta late ovalia, inferne imbricata, obtuso-mucronulata, plus minusve torta, coronam subaequantia; corona latiuscula, marginem sexlobatum versus abrupte dilatata, patens, recurvata. Capsula subglobosa, nec trigona nec rugosa.

† Folia –8 mm. lata, quam in typo glauciora. Pedicellus –10 mm. longus. Flos paulo minor, pallidior, perianthii segmentis minus imbricatis coronam aequantibus praeditus; coronae margo minus patens et lobatus, tenuius crenato-dentatus.

Bulb about 20 mm. long. Leaves less erect, –8 mm. broad, more glaucous than in the type. Pedicel rather longer (–10 mm.). *Flower rather smaller* (45–50 mm. long) and paler, with perianth-tube 16–20 mm. long and less imbricated perianth-segments equalling the corona ; *mouth of corona less expanded and lobed*, with more finely crenate-dentate, plicate margin. Otherwise like the type. [v.s.]

β. *intermedius* var. nov. (figs. 4B, 15).*

N. Poujastou Barr in litt. in Hb. Kew. (1889).
Exsicc. Barr, Haute-Garonne, 1889, in Hb. Kew., as *N. Poujastou* (type) ; Pugsley, No. 465.

Bulb ovoid, about 25 mm. long. Leaves 5–8 (rarely –10) mm. broad. Scape 15–20 cm. long. *Pedicel* 3–5 mm. long, *often nearly obsolete*. Flower 40–50 mm. long, nearly uniformly primrose-yellow with base o tube greenish (margin of perianth-segments rather paler), or occasionally with a deeper yellow edge to the corona ; perianth-tube 15–20 mm. long ; *perianth-segments oblong*, slightly imbricated, subacute-mucronate, *somewhat twisted*, suberect and falling over the corona, subequalling the corona in length ; *corona a little dilated above* but not spreading, *with suberect*, obscurely lobed, irregularly *dentate-laciniate*, strongly plicate *margin*, transversely rugulose within. *Capsule* 12–15 mm. long, *subrotund-obovoid* or subrotund, subtruncate, nearly terete, not furrowed. Otherwise like the type.

This beautiful Daffodil cannot be identified with certainty in the works of any pre-Linnean author except PARKINSON, who (*l.c.*) describes it at some length, remarking that its flower is of one even colour " which usually we call a strawe colour," and with " the brims [of the corona] turned up a little, which maketh it seem the larger." He also notes the earliness of its flowering and that it was obtained in the Pyrenees. It is not among the forms figured in the Paradisus.

In the first half of the nineteenth century, when so many forms of Daffodils were distinguished by SALISBURY and HAWORTH, this plant remained unnoticed, and it was not until 1882 that it was reintroduced into cultivation by Messrs. BARR with bulbs collected near Bayonne. In his list of Narcissi in The Florist and Pomologist, p. 91 (1884), BARR places this plant among the forms of *N. moschatus*, presumably owing to its pale flowers. It seems, however, to differ materially from *N. moschatus* and its allies in its broader perianth and corona, and still more in its very short, abruptly deflexed pedicel and subrotund fruit ; and these features bring it nearer to *N. Pseudo-Narcissus*.

The three forms described above were sent to Kew by BARR in 1889, with an explanatory letter that is preserved with them. The plant taken as the specific type is the one that BARR considered such, and which clearly agrees best with PARKINSON'S account. The form *asturicus* is only slightly different, but the variety *intermedius* is much more distinct, and in form of flower scarcely differs from some states of *N. Pseudo-Narcissus*. In the letter referred to above BARR gives a second name, ' Bland Doré,' to this variety, and I learn from his son, Mr. P. R. BARR, that this was intended to indicate a form with

* Pedicellus 3–5 mm. longus, saepe subobsoletus. Flos fere concolor, primulinus, tubi basin versus viridescens, aut rarius coronae margine plus minusve luteo-tincto ; perianthii segmenta oblonga, paulo imbricata, satis torta, coronam subaequantia. Corona superne paulo dilatata, haud patens, obscure lobata, margine suberecto dentato-laciniato. Capsula subrotunda, subtruncata, fere teres.

a yellow-edged corona that had been found near Bayonne. BARR does not mention this feature in his letter, and the plants usually sold by his firm as 'pallidus praecox' have borne nearly self-coloured flowers. Plants with yellow-edged coronas will be dealt with further under *N. moschatus*.

The range of *N. pallidiflorus*, so far as at present known, extends from the Asturias Mts. (possibly from Galicia) along the Pyrenees almost to the Mediterranean. The typical form grows in the Western Pyrenees, especially about Bayonne; f. *asturicus* was collected by BARR in the Asturias; var. *intermedius* in the Central Pyrenees in the Dept. of Haute-Garonne. In 1925 I found this variety growing in pine-woods and in swamps further east in the Pyrénées-Orientales. There is a specimen from Lago Enol, near Covadonga, Asturias, in Herb. Lacaita (No. 28951, as *N. moschatus*), that shows the narrow foliage and the flowers of var. *intermedius*, but its pedicels are distinctly longer (–15 mm.) and its capsules undeveloped, so that it is uncertain whether it belongs to this species.

N. pallidiflorus appears to increase but little by bulb division both when wild and under cultivation. The individuals that I observed in the Pyrenees mostly grew singly and never in large clumps, and bulbs in grass in my garden have flowered regularly for over thirty years without ever dividing. Although it often flowers in February in English gardens (in 1932 the first flower of var. *intermedius* opened on January 17) this Daffodil is not always early-flowering, for it was still in bloom in the Pyrenees (6,000 feet alt.) in the first week of June, when the flowers of *N. poeticus* were beginning to open.

18. NARCISSUS MACROLOBUS (Jord.) comb. nov. (fig. 15).

Ajax macrolobus Jordan, Icones Fl. Europ. iii, 3 (1903).
Pseudo-Narcissus pyrenaeus hispanico et anglico similis (*P. pyrenaeus variformis*) Park. Par. 99 (1629), ex parte ?
Icon. Jordan, *l.c.* t. 364.
Exsicc. Pugsley, Nos. 479 and 480.

Bulb rather small, ovoid, 20–30 mm. long. *Leaves erect*, 15–25 cm. long, *glaucous*, nearly flat, 8–12 mm. broad, obtuse, attenuate above. Scape 15–25 cm. long, sometimes shorter than the leaves, erect, not much compressed, obscurely 2-edged, strongly furrowed. *Pedicel deflexed, short* (about 10 mm. long). *Flower rather large*, drooping or horizontal, 50–60 mm. long (excluding ovary), *creamy white* or ochroleucous, *with* yellowish tube more or less tinged with green, and *sulphur- or lemon-yellow corona*, nearly scentless; *perianth-tube rather short*, 15–20 mm. long, scarcely half as long as the corona; *perianth-segments large*, ovate-lanceolate, acuminate or obtuse-mucronate, imbricated, more or less twisted; ascending over the corona, subequalling the corona in length; *corona more or less broad and expanded above, with* spreading margin cut into shallow, *rounded*, crenulate, lightly plicate-rugose *lobes*. Filaments inserted 3–4 mm. above base of perianth-tube; anthers without dark apical spot. *Capsule* about 20 mm. long, *oblong or broadly oval*, very obtuse, *slightly trigonous* and furrowed, *not rugose*. Chalazal end of seed strongly appendiculate.

β. *pallescens* var. nov.* (fig. 4D).

Exsicc. Pugsley, No. 481.

* Pedicellus brevissimus. Flos stramineus, tubo coronâque paulo saturatioribus; perianthii segmenta obtusa, mucronata, spiraliter torta; corona lata, lobis patentibus, rotundatis complanatisve, tenuiter crenato-denticulatis. Capsula late ovalis vel obovoidea, haud trigona.

Pedicel very short (5–8 mm. long). *Flower straw-coloured*, with rather deeper tube and corona ; perianth-segments obtuse-mucronate, spirally twisted ; corona broad, with spreading, rounded or flattened lobes, finely crenate-denticulate, subregularly plicate and much transversely rugulose within. *Capsule* 20–25 mm. long, *broadly oval or obovoid*, not trigonous, obscurely furrowed. Otherwise like the type.

N. macrolobus is most closely allied to *N. Pseudo-Narcissus*, which it resembles in its short, deflexed pedicel and drooping flower. It differs in its broader foliage and more uniformly dwarf habit, in its usually lighter-coloured flowers, in its much shorter perianth-tube and more ample perianth-segments, and in its broader and more expanded corona with rounded, almost subentire lobes. As a rule, the flower is much more handsome than that of *N. Pseudo-Narcissus*.

The species was described and figured by JORDAN from plants found at St. Paul, in the Pyrénées-Orientales, and a form which I collected above Luchon, Haute-Garonne, in 1925 is clearly conspecific although not identical in all respects. There are many similar plants, probably wild individuals obtained in the Pyrenees, growing about the mound in the wild garden at Kew. Among these there is a considerable variation in colouring, some flowers having a full yellow corona, while in others the flowers are very pale and nearly concolorous, more or less agreeing with the variety *pallescens* described above. This variety is founded on plants growing in my garden, which were obtained about 1910 as 'pallidus praecox,' and no doubt were collected in the Pyrenees, although the exact habitat is not now known. While resembling *N. pallidiflorus* in the colour of the flower, they differ essentially in its proportions, the perianth-tube being much shorter.

N. macrolobus is a native of the Eastern and Central Pyrenees, and is perhaps much more widely distributed. It has certainly often been collected for horticultural purposes, but rather curiously no specimens have been observed in herbaria other than my own gatherings. The plant was presumably included in PARKINSON'S *Pseudo-Narcissus hispanico et anglico similis* (*P. pyrenaeus variformis*).

Series IV. *Nobiles.**

Flowers usually large, yellow or bicoloured, with the flowering pedicel neither deflexed nor very short. Capsule more or less ellipsoid.

19. NARCISSUS GAYI (Hénon) comb. nov. (fig. 4E).

Ajax Gayi Hénon ap. Jordan, Icones Fl. Europ. iii, 2 (1903) ; *N. princeps* hort. recent.
Icon. Jord. *l.c.* t. 357.
Exsicc. Gay, Réserve, 1859, in Hb. Kew., as *N. Pseudo-Narcissus praecox*.

Bulb rather large, ovoid or subrotund, 35–50 mm. long, with pale brown scales. *Leaves erect*, 30–50 cm. long, *pale green*, channelled and obtusely keeled, 9–12 mm. broad, much attenuate above, obtuse. Scape 35–50 cm. long, erect, stout below and attenuate upwards, strongly compressed, 2-edged, finely striate. *Pedicel* rather slender, compressed, *curved, short* (10–15 mm. long). *Flower large,*

* Flores saepissime magni, lutei vel bicolores, pedicello florifero nec deflexo nec brevissimo. Capsula plus minusve ellipsoidea.

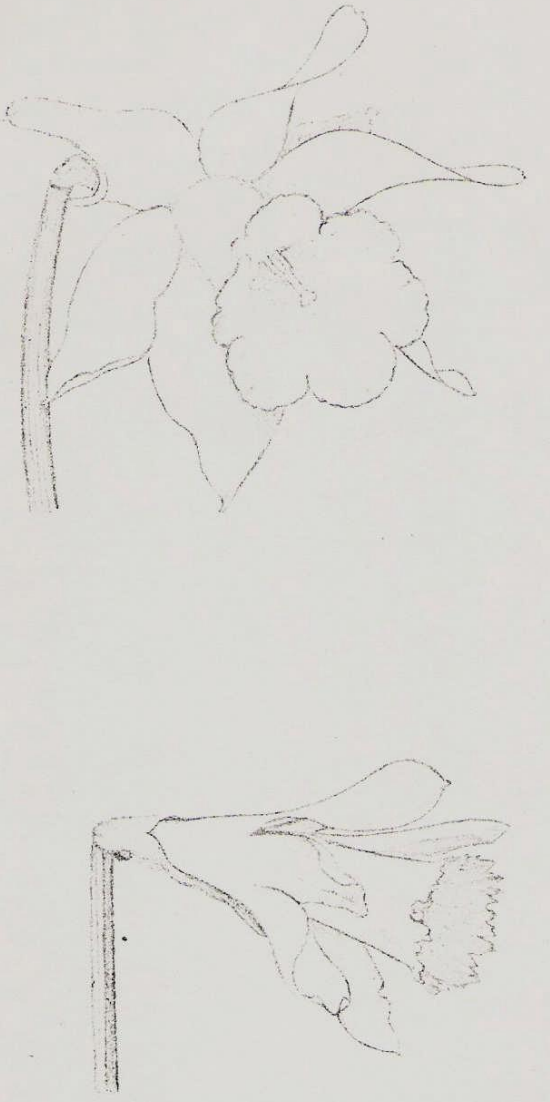

FIG. 15.—NARCISSUS MACROLOBUS (above); N. PALLIDIFLORUS var. INTERMEDIUS (below) (nat. size).
From plants cultivated at Wimbledon 1931, collected in Pyrenees.

horizontal or ascending, 55–65 mm. long (excluding ovary), *with sulphur-yellow perianth*, the tube lightly shaded with green, and *bright canary-yellow corona* deeper towards the margin, strongly scented; *perianth-tube relatively short*, 15–20 mm. long; *perianth-segments narrow*, oblong or lanceolate, mucronate or subacute, scarcely imbricated below, erect-spreading, more or less waved and twisted, subequalling the corona; *corona long, somewhat dilated* and spreading *above*, the margin cut into six broad, *shallow, imbricated lobes*, irregularly plicate, waved and obscurely bi-crenate, scarcely rugulose within. Filaments inserted 3–4 mm. above base of perianth-tube; anthers with very minute dark apical spot. *Capsule* 20–25 mm. long, *oval-ellipsoid*, obtuse, bluntly *trigonous with flattish sides*, without furrows. Chromosome number (' princeps ') 14 (Philp).

β. *praelongus* var. nov.

Ajax praelongus Jordan, Icones Fl. Europ. iii, 2 (1903).
Icon. Jord. *l.c.* t. 358.

Leaves rather narrow, twisted. Scape little compressed, furrowed. Pedicel 15–20 mm. long. *Flower* 50–55 mm. long, with yellow perianth-tube (12–15 mm. long), *pale yellow* twisted segments, and *golden corona* with spreading margin cut into six well-marked, crenate lobes. *Capsule* about 30 mm. long, *narrowly oblong-obovoid*, obtusely trigonous, much attenuate below. [n.v.]

N. Gayi is clearly allied to *N. Pseudo-Narcissus* and resembles it strongly in the colour and scent of its flowers. But the flowers are not only much larger but differ essentially in their proportions, the perianth-tube being relatively very much shorter. The form of the trigonous capsule is also different, and the points of distinction seem on the whole to warrant the retention of HÉNON'S species.

The above description has been adopted from JORDAN'S account, collated with the Kew specimen cited and other recent cultivated material. The excellent figure convincingly shows the plant's identity with the modern garden Daffodil known as ' princeps,' the only apparent difference being in the breadth of the leaves, which rarely exceed 10 mm. as grown in Britain. GAY'S specimen, cited above, which was a garden plant, was noticed by BURBIDGE, who annotated it " near var. *princeps*."

The plant is not certainly known in a wild state. JORDAN'S account was drawn up from a cultivated form of unknown origin, and GAY'S specimen came from a botanic garden. BARR [Florist and Pomologist, p. 91 (1884)] attributed an Irish origin to the present-day 'princeps' grown in England, and later [Garden, xxvii. 235 (1885)] he reported that he had obtained it from Italy. Some Pyrenean forms are somewhat similar in the proportions of the flower. A specimen in Herb. Mus. Brit. (GADECEAU, Prairies des bords du Canal Maritime de la Basse Loire, Loire-Inf., 1893, as *N. Pseudo-Narcissus*, fleures très grandes, très discolores) is a tall plant with very long and attenuate leaves, that has the aspect of *N. Gayi*.

The variety *praelongus* is a French garden plant of doubtful affinities that seems best placed here. It differs from the type in its less compressed scape, its smaller and yellower flowers with more distinctly lobed corona, its longer pedicels and its peculiarly elongate capsules.

The name ' princeps ' originated in HERBERT'S Amaryllidaceae, where a variety so called is inserted under *Ajax minor* and also under *Ajax tubaeflorus*. But there seems to be no good reason for associating the present plant with either of these species

20. NARCISSUS NOBILIS Schultes f. (figs. 5A, 19).

Narcissus nobilis Schultes f. in Syst. Veg. ed. 16, vii, 939 (1830). *Ajax nobilis* Haworth, Pl. Succ. App. 327 (1812); Narciss. Revis. 115 (1819); Mon. 3 (1931); *A. Pseudo-Narcissus* var. *nobilis* Herbert, Amaryll. 301 (1837).

Pseudo-Narcissus pyrenaeus hispanico et anglico similis (*P. pyrenaeus variformis*) Park. Par. 99 (1629), ex parte?

Icon. Redouté, Lil. iii, 158, as *N. Pseudo-Narcissus*.

Exsicc. Hort. Soc. Hort. Lond. 1834, in Hb. Lindley; Barr, cult., 1878, in Hb. Kew.; Sennen, Pl. d'Esp., No. 5635, Palencia, as *N. muticus*?; Wilmott, Puerto de Ponton, in Hb. Mus. Brit.

Bulb of moderate size, subrotund, 30–35 mm. long, with brown scales. *Leaves erect*, 15–50 cm. long, *glaucous*, 8–12 (rarely –17) mm. broad, attenuate above, obtuse. Scape 15–50 cm. long, erect, rather stout below and tapering upwards, little compressed, 2-edged, strongly striate. *Pedicel* rather slender, *suberect but curved above*, usually *short* (8–15 mm. long). *Flower rather large*, horizontal or ascending, 50–65 mm. long (excluding ovary), *pale yellow, with* deep yellow or greenish perianth-tube and *golden-yellow corona*, strongly scented; *perianth-tube rather long* (20–25 mm.); *perianth-segments elliptic*, elliptic-oblong or elliptic-lanceolate, obtuse-mucronate, imbricated below, more or less spreading, undulate and twisted, subequalling the corona; *corona straight, expanded above* with spreading margin, either *deeply dentate or cut irregularly into shallow*, sometimes imbricate *lobes*, which are more or less crenate-dentate, plicate above, and transversely rugulose within. Filaments inserted 4–5 mm. above base of perianth-tube. Style shortly exceeding stamens. *Capsule* 20–25 mm. long, *broadly ellipsoid, nearly terete*, not furrowed. Chalazal end of seed strongly appendiculate.

Like *N. Gayi* this species is allied to *N. Pseudo-Narcissus*, from which it may be best distinguished by its usually larger size, suberect instead of deflexed pedicels, larger flowers with spreading perianth-segments and corona, and ellipsoid capsules. Its stronger growth, suberect pedicels and ellipsoid capsules similarly separate it from *N. pallidiflorus* and *N. macrolobus*; and of these the former is further characterized by its pale flowers, and the latter by its shorter perianth-tube. *N. Gayi* differs in its generally taller growth, shorter perianth-tube with narrower segments, and trigonous capsules.

HAWORTH'S *Ajax nobilis* was founded (*l.c.*) on a plant received from a friend, Mr. EVANS, and was briefly described "Scapo teretim ancipiti alte striato, laciniis corollae patentissimis tortis ellipticis luteis, nectario perluteo ore patulo profundissime serrato brevioribus. Precedenti [*A. Telamon*] minor, petalis magis expansis." This short diagnosis is repeated in the Revisio and the Monograph, with no further details except that in the latter a synonym is cited, "Redouté, Lil. iii. t. 158," the species following *N. Pseudo-Narcissus* and *N. serratus* in a group *Serricoronae*. *A. nobilis* is reduced by HERBERT, who thought its scent unpleasant, to a variety of *N. Pseudo-Narcissus*, but his account, though more detailed, affords little additional information except to show that the plant was probably of larger growth than the typical species. The figure of REDOUTÉ cited by HAWORTH depicts a large Daffodil of Pseudo-Narcissus affinity, but appears more conventional than botanically accurate. There are, fortunately, two flowers in Herb. Lindley, taken from the garden of the London Horticultural Society in 1834, which were named *A. nobilis* by HAWORTH and SABINE. They agree with HAWORTH'S description, so far as can be seen, and may apparently be regarded as authentic

specimens. And they are in accord with another contemporary example in Herb. Fielding, which is similarly named. The last specimen shows foliage as well as a flower. The above description has been drawn up from HAWORTH'S original account and these early specimens, supplemented by later material that seems conspecific.

In BARR'S list in The Florist and Pomologist, p. 91 (1884), *N. nobilis* is shown as a form not in cultivation, but subsequently he identified it with *N. variformis* of PARKINSON, which he had reintroduced that year from the Pyrenees. Some of the plants on the mound at Kew are forms of this species. Many of the Daffodils sent out as *variformis*, however, seem to belong to *N. macrolobus*.

Like *N. macrolobus*, *N. nobilis* grows in the Central Pyrenees, where in 1925 I collected both plants on a single day on the mountains above Luchon. *N. nobilis* also occurs in the Spanish provinces of Leon and Old Castile, and is probably widely distributed. There are other Spanish forms, apparently bearing pale-coloured flowers like *N. pallidiflorus*, that seem to belong to *N. nobilis*. Such is the *exsiccata* " Elias, Izarra, Viscaya " (as *N. sylvestris* Lamk.).

21. NARCISSUS LEONENSIS sp. nov.*

Exsicc. James, Riaño, 1896, in Hb. Lacaita (No. 28950), as *N. bicolor*.

Plant very large and tall. Bulb not seen. *Leaves erect*, long, *green*, apparently twisted, 12–14 mm. broad, attenuate above, obtuse. Scape tall, erect, rather stout, compressed and 2-edged, finely striate. Spathe very large, 10 cm. long, tinted with green. *Pedicel* rather stout, *nearly erect*, 20–25 mm. long. *Flower very large*, ascending, 65–70 mm. long to edge of corona, 75–80 mm. to tip of perianth-segments (excluding ovary), *bicoloured* with cream perianth-segments, yellow perianth-tube more or less tinted with green and golden-yellow corona; *perianth-tube 20–25 mm. long*; *perianth-segments ovate-lanceolate*, obtuse-mucronate, imbricated below, apparently erect-spreading, not twisted, *clearly longer than the corona*; *corona much dilated above* (about 40 mm. across), with more or less spreading *margin not lobed* but irregularly and shallowly crenate-lobulate, somewhat plicate, rugulose within. Style and stamens relatively short. Filaments inserted about 7 mm. above base of perianth-tube. *Capsule* (immature only seen) at least 25 mm. long, *oval-ellipsoid*, *apparently not trigonous* or furrowed. [v.s.]

This fine Daffodil is described from a solitary gathering in the north of the Spanish province of Leon. The specimens collected lack complete foliage and scapes as well as bulbs, but fortunately they are extremely well dried so that the characters of the flowers can be satisfactorily determined. The flower is the largest that I have seen in any wild Daffodil. Its colour recalls *N. bicolor* L., as does also the form of the corona, but the insertion of the stamens is widely different, and the pedicel and capsule, so far as can be seen in the flowering stage, rather resemble *N. hispanicus*. A plant so distinct can only be described as

* Planta maxima, elatior. Folia erecta, viridia, 12–14 mm. lata, sursum attenuata. Scapus robustus, tenuiter striatus. Pedicellus fere erectus, satis longus. Flos maximus, adscendens, ad perianthii apicem 75–80 mm. longus, bicolor perianthii tubo flavo segmentis lacteis coronâque aureâ; perianthii tubus 20–25 mm. longus; segmenta ovato-lanceolata, inferne imbricata, quam corona plane longiora; corona superne valde dilatata, margine patente, haud lobato. Filamenta circa 7 mm. supra perianthii basin inserta. Capsula ovali-ellipsoidea, verisimiliter haud trigona.

a new species, and taking its known characters as a whole, it seems best placed in the series *Nobiles*.

The region in which this plant was found has been but little visited by botanists, and it is to be hoped that it will be discovered in fresh neighbouring localities. There is a Portuguese example in Herb. Mus. Brit. (Fl. Lusit. Exsicc. No. 51, *N. Pseudo-Narcissus* L. v. *bicolor* G. and G. Cabeceiras de Basto, leg. Henriques, 1885) that may possibly be conspecific with *N. leonensis*, but the specimen is insufficient for a certain determination. It shows no resemblance, however, to *N. bicolor* L., but has a rather long perianth-tube and an ellipsoid fruit borne on an erect pedicel 35 mm. long.

Series V. *Albiflori.**

Flowers rather small to rather large, pale sulphur or white, with rather short perianth-tube and more or less arcuate-recurved flowering pedicel. Capsule more or less ellipsoid.

22. NARCISSUS MOSCHATUS Linn. (figs. 5B, 16).

Narcissus moschatus Linn. Sp. Pl. ed. 2, 415 (1762), excl. syn. partim ; Willk. and Lge. Fl. Hisp. i, 152 (1861), ex parte ? ; *N. albus* Haw. in Trans. Linn. Soc. v, 243 (1800), non Miller ; *N. candidissimus* DC. in Red. Lil. iv, No. 188 (1807) ? ; *N. moschatus* δ Ker in Bot. Mag. No. 1300 (1810) ; *Ajax patulus* Salisb. in Trans. Hort. Soc. i, 348 (1812) ; *A. albus* Haw. Narciss. Revis. 117 (1819) ; *A. moschatus* Haw. in Phil. Mag. 131 (1830) ; Mon. 2 (1831) ; *A. moschatus* var. *candidissimus* Herbert, Amaryll. 304 and 416 (1837) ; *N. Pseudo-Narcissus* subsp. *N. moschatus* Baker, Amaryll. 4 (1888) ; *N. Pseudo-Narcissus* subsp. *N. silvestris* race *N. candidissimus* Rouy, Fl. Fr. xiii, 31 (1912) ; *N. cernuus* hort. recent., pro maj. parte.

Pseudo-Narcissus hispanicus flore albo medius Park. Par. 100 (1629) ? ; *N. montanus sylvestris totus albus minor* Merian, Floril. Ren. t. 135 (1641) ? ; *N. albus calice praelongo flore pendente* Rudbeck, Camp. Elys. 73, f. 16 (1701) ; *N. sylvestris albic. nutante flore minor* Barrel. Pl. Obs. No. 921 (1714).

Icones. Rudbeck, *l.c.* ; Barrel. *l.c.* No. 921 ; Bot. Mag. t. 1300, as *N. moschatus* δ.

Exsicc. Hort. Soc. Hort. Lond. 1834, in Hb. Kew. and Hb. Lindley, as *N. moschatus albus* ; *A. moschatus albus* in Hb. Fielding ; Gadeceau, cult., in Hb. Mus. Brit., as *N. cernuus*.

Bulb rather small, ovoid-attenuate, 30–35 mm. long, with pale brownish scales. *Leaves erect*, 25–35 cm. long, *glaucous, channelled and slightly keeled*, more or less twisted, 6–8 mm. broad, attenuate above, obtuse. Scape 25–35 cm. long, erect, slender, compressed and 2-edged, very finely striate. *Pedicel* slender, straight below, *arcuate-recurved above*, 10–20 mm. long. *Flower of moderate size* or rather small, *drooping*, 40–50 mm. long (excluding ovary), *greenish- or sulphur-white and nearly concolorous*, except the perianth-tube, which is green at the base and shaded with yellow above, the whole becoming paler with age, faintly scented ; *perianth-tube* usually rather narrow, *12–18 mm. long* ; *perianth-segments* oblong-lanceolate, inner narrower, all more or less acute, scarcely imbricated below, *suberect* and drooping over the nearly inverted corona, *usually* spirally *twisted, subequalling the corona* ; *corona long and straight*, often rather narrow, *slightly dilated above*, longitudinally plicate and transversely rugulose within, *with* slightly spreading and *shallowly 6-lobed margin*, the lobes rounded, subentire or sometimes with a few crenatures, but not serrate or crisped. Filaments inserted about 4 mm. above base of perianth-tube ; anthers buff-yellow. Style rather long, with small and distinctly 3-lobed stigma. *Capsule* 15–20 mm. long, *narrowly oblong-ellipsoid* or clavate, obtuse, *nearly terete*, slightly trigonous and not furrowed. Chromosome number 14 (Philp).

* Flores satis parvi ad majusculi, pallide sulphurei vel albi, perianthii tubo breviusculo et pedicello florifero plus minusve arcuato recurvato. Capsula plus minusve ellipsoidea.

N. moschatus is one of the most distinct Daffodils owing to its elegantly drooping, silvery-white flowers with narrow, little cut corona. The narrow, oblong form of its fruit is also characteristic.

LINNAEUS, in Sp. Plant. (*l.c.*), defines the species as "N. . . . nectario cylindrico truncato subrepando aequante petala oblonga," adding "ore obsolete repando, non dentato aut crispo." There is no reference in the description to a white flower. The synonyms cited are numerous, viz.: six from BARRELIER'S Icones, five of which represent different white-flowered plants; two from C. BAUHIN'S Pinax, one a bicolour and one a yellow Daffodil; and five from RUDBECK'S Campi Elysii, whereof two are yellow-flowered, one a bicolour, one doubtful, and only one white-flowered. From these synonyms, as from the description, it is clear that LINNAEUS regarded the cylindrical, subtruncate corona, rather than a white flower, as the essential specific character; and his yellow-flowered synonyms include *N. abscissus*. The bicoloured plant twice cited, however, which is figured by RUDBECK, has a different form of corona and belongs rather to *N. bicolor*; and it is this form that is credited with the musky scent that presumably suggested the epithet "moschatus." LINNAEUS' account may therefore be said to cover at least three distinct species.

There is fortunately a specimen of *N. moschatus* in the Linnean Herbarium, consisting of a flower and part of a leaf, which was placed there before 1767. It came from the Upsala garden and is marked in LINNAEUS' handwriting "~~triandrus~~ ~~moschatus~~ moschatus." There is also a pencil notation "Stam. 6," and the corona has been slit on one side apparently to verify this. The flower is of moderate size, barely 40 mm. in length, and was no doubt whitish in colour. The perianth-segments, which have been bent back on one side in pressing, are about as long as the corona and show no signs of twisting. The corona is slightly dilated about the apex, and has six very shallow, rounded lobes. The immature capsule appears narrowly oblong, and the leaf 8 mm. broad at its widest part. From these features it can be seen at once that the plant belongs to the smaller, narrow-leaved, white Daffodils. It almost exactly matches the form figured in Bot. Mag. t. 1300 as *N. moschatus* δ, and it closely agrees with the account of the *Ajax albus*, afterwards *A. moschatus*, of HAWORTH. It is also very similar to the present-day garden plant sold as *N. cernuus*. As the specimen must evidently be regarded as the type of *N. moschatus* L., the species has been described accordingly and identified with these later synonyms. The plant that needs the most careful segregation from this type is the dwarf, pure white Daffodil collected in the Spanish Pyrenees in recent years and sold under the name of *N. moschatus* of HAWORTH. A dried flower of this plant very closely resembles the Linnean specimen, but in all the examples that I have seen the regular twisting of the generally narrower perianth-segments is still obvious, the apical dilation of the corona is absent, the style is distinctly longer, and the capsule less narrow and more triangular in section.

The present species is not certainly known as a wild plant, though

it may possibly be, at least in part, the *N. moschatus* of WILLKOMM and LANGE (*l.c.*), or of MERINO'S Flora de Galicia, iii. p. 112 (1909). But, seeing that it was grown as a garden plant early in the seventeenth century, it seems more likely to have been brought from the Pyrenees, where so many forms of the subgenus were first collected. It is a remarkable fact that white Daffodils are described or figured in most of the herbals or botanical works from the beginning of the seventeenth century, and that several of these books mention more than one kind. No fewer than eight are figured by BARRELIER. Among the brief and imperfect descriptions, and often too crude plates, it is not easy always to determine accurately what were the plants intended, but the four pre-Linnean citations shown above seem to refer to the restricted *N. moschatus* represented by the type specimen in the Linnean Herbarium. The plant cited from RUDBECK grew in the garden at Upsala, from which this specimen was obtained.

The synonym *N. candidissimus* has been inserted with some doubt, for the name is based by DE CANDOLLE solely on an early drawing, which is reproduced in REDOUTÉ'S plate. DE CANDOLLE'S brief diagnosis agrees, so far as it goes, with *N. moschatus*, and was so interpreted by CURTIS, SALISBURY, HAWORTH and HERBERT, but the plate appears to represent a conventional white Daffodil with elegantly twisted perianth. SALISBURY relates (Trans. Hort. Soc. i. p. 349) that both *N. moschatus* and *N. tortuosus* were in cultivation in Paris in the time of Henry IV, and that he had seen a fire-screen at Fontainebleau, on which they were depicted with the title "Coquelourdes blancs, 1598." There is a good figure of *N. moschatus* among the drawings by SALISBURY at South Kensington.

In BARR'S list of 1884 (Florist and Pomologist, p. 91) *moschatus* is starred as a form not then known in cultivation, in contradistinction to *albicans*, *cernuus* and *tortuosus*; and very soon afterwards the name was applied to the recently rediscovered dwarf, white Pyrenean Daffodil, described hereafter as *N. alpestris*. It is doubtful whether the *cernuus* of BARR'S list is the *cernuus* of SWEET—a form seemingly more closely allied to *N. tortuosus* than to *N. moschatus*—but it appears to be the plant still sold under the name of *cernuus*, which I am unable to separate from *N. moschatus* L. The specimen in Herb. Lindley from the garden of the Horticultural Society named '*moschatus albus*' by HAWORTH and SABINE in 1834 can still be clearly seen to be the *N. cernuus* of present-day gardens. In his Monograph HAWORTH shows both *N. cernuus* and *N. moschatus* as species, and cites the same synonym from PARKINSON (*P. hispanicus flore albo minor*) for both of them! The very beautiful double-flowered form of this species (*A. cernuus* β *flore elegantissime pleno*, HAW. Mon. p. 2) is still to be seen in cultivation.

A Daffodil that may be mentioned here is that formerly sold under the name of 'Princess Ida,' which I had in the garden about twenty years ago. In flower this somewhat resembled *N. moschatus* but was notable for the pale yellow margin of its whitish corona. I understand

from Mr. P. R. BARR that it was a garden hybrid raised by a grower in Guernsey, but it strongly recalled one of the unidentified plants of the early writers, which is well figured by BARRELIER in Icon No. 924 (*N. sylvestris albicans oris tubae luteis minor*). There is also a *N. albus fimbria lutea* in C. BAUHIN'S Pinax (p. 53), founded on a plant of SWEERT'S, but it is doubtful from the figure whether the same form is intended. I have been unable to trace any specimen of this Daffodil in herbaria, and it appears to be no longer on sale.

23. NARCISSUS ALPESTRIS sp. nov. (figs. 5C, 17).*

N. moschatus Willk. and Lge. Fl. Hisp. i, 152 (1861), ex parte ? non Linn. *N. moschatus* of Haworth, hort. recent.

Pseudo-Narcissus flore albo Clusius, Alt. Append. Hist. 21 (1605); Gerard ed. 2, 132 (1633) ?; J. Bauhin, Hist. ii, 597 (1651); *N. oblonga tuba totus albus* Sweert, Floril. i, pl. 21, f. γ (1612) ?; *P. hispanicus flore albo minor* Park. Par. 100 (1629); *N. totus albus nutante fl. longa et angusta tuba* Barrel. Pl. Obs. No. 945 (1714) ?

Icones. Clusius, *l.c.*; Park. *l.c.* t. 101, f. 4; Gerard, *l.c.*; J. Bauhin, *l.c.*; Garden, lxxviii, p. 89, as *N. moschatus* of Haworth.

Exsicc. Maw, Spanish Pyrenees, 1885, in Hb. Mus. Brit., as *N. cernuus* (type); Soc. Dauph. No. 5679, as *N. cernuus*.

Bulb small, ovoid, 20–25 mm. long, with thin, brownish-white scales. *Leaves erect*, 10–15 (rarely –25) cm. long, *glaucous, channelled and keeled*, 5–7 (rarely –9) mm. broad, attenuate above, obtuse. Scape 10–15 (rarely –25) cm. long, suberect, slender, little compressed and obscurely 2-edged, distinctly striate. Spathe rather thick and relatively short. *Pedicel* slender, *arcuate-recurved*, 10–15 mm. long. *Flower rather small, drooping or inverted*, 35–45 mm long (excluding ovary), *pure white* except the bright green stripes or suffusion on the perianth-tube, almost scentless; *perianth-tube* generally rather narrow, *10–13 mm. long*; *perianth-segments* narrowly oblong (more rarely broader, oval), obtuse, scarcely imbricated, *suberect* and drooping over the inverted corona, spirally *twisted*, clearly *shorter than the corona*; *corona long* and narrow (more rarely shorter and broader), *straight and not apically dilated*, longitudinally plicate, usually *with* waved but *nearly entire and truncate margin*, rarely very obscurely and shortly 6-lobed, transversely rugulose within. Filaments inserted about 3 mm. above base of perianth-tube; anthers full yellow. Style long and slender; stigma more clearly 3-lobed than in other species. *Capsule* 12–20 mm. long, *oblong-ellipsoid*, obtuse, *trigonous* or triangular with flattish sides, without furrows. Seed not seen. Chromosome number 14 (Collins).

This species, very distinct by its pure, milky-white, drooping flowers with deep yellow anthers, is most closely related to *N. moschatus*, but differs in its lower and slenderer habit, narrower and more channelled foliage, white flowers with more truncate corona, and broader, more triangular capsules.

N. alpestris is evidently the *Pseudo-Narcissus flore albo* of CLUSIUS, which he received from the Pyrenees with Cyclamens and other plants after the publication of the Rariorum Plantarum Historia in 1601. CLUSIUS regarded it as a remarkable species, and described and figured it in an Altera Appendix ad Historiam (p. 21), which was apparently

* Folia erecta, glauca, canaliculata et infra carinata, 5–9 mm. lata, attenuato-obtusa. Scapus 10–25 cm. longus, gracilis, parum compressus. Pedicellus gracilis, arcuato-recurvus, longiusculus. Flos satis parvus, cernuus, praeter perianthii tubum viridi-signatum omnino candidus; perianthii tubus saepissime paulo angustus; segmenta anguste oblonga, obtusa, vix imbricata, spiraliter torta, quam corona plane breviora; corona longa, angusta, recta, apice haud dilatata, ore fere integro truncato. Antherae saturate flavae. Capsula oblongo-ellipsoidea, lateribus planiusculis trigona.

printed with the Exoticorum Libri Decem in 1605. The description is in unusual detail and may be translated thus: "In 1604 two bulbs were received from the Pyrenees, sent by JOACHIM VENERIUS, of a form of *Pseudo-Narcissus* not yet described. Its leaves are narrow, a span long, and keeled below; its scape slender, a span long; the flower all white, like that of the common *Pseudo-Narcissus* but a little smaller, an inch and a half long, with six leaves similarly embracing the tube, the tube a little narrower and edge not fimbriate; with six white stamens with yellow anthers and style longer than these. No peculiar scent was noticed and the flower opened in April; the seeds are in a triangular head or case." This account is repeated in JOHN BAUHIN'S Historia. The *P. hispanicus flore albo minor* of PARKINSON seems to be the same plant, for the figure, though crude, portrays the form of its flower sufficiently well, and PARKINSON mentions that it is the purest in colour of all the white-flowered kinds. It is also given in JOHNSON'S Gerard. It is thus clear that it was brought into cultivation in Britain. It is not easy to determine whether it is one of the white-flowered Daffodils figured by BARRELIER, or to identify it in the works of other early authors. It seems probable that it was soon lost to cultivation, as might be expected, for it is one of the most difficult species to grow successfully. There is no ground for supposing that LINNAEUS knew it, and it was likewise unknown to CURTIS, SALISBURY, HAWORTH and HERBERT, who were unacquainted with any Ajax with uniformly pure white flowers.

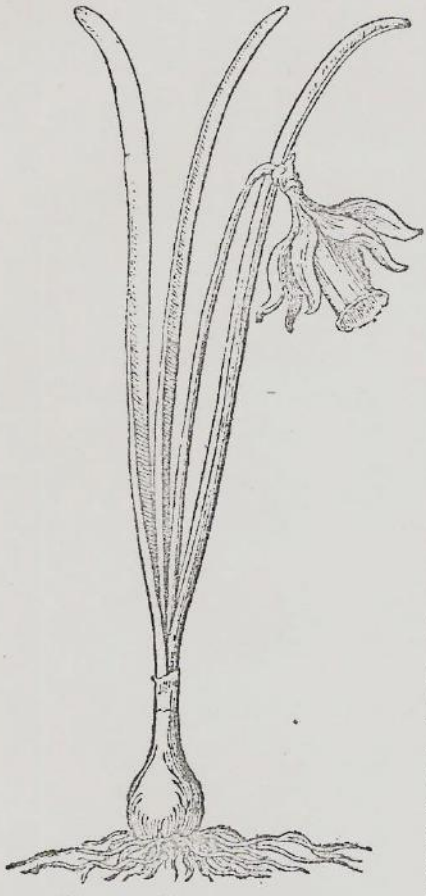

FIG. 17.—NARCISSUS ALPESTRIS.
From C. Clusius' *Altera Appendix ad Historiam* (1605).

It was not till 1885 that it was rediscovered, through GEORGE MAW, as a wild plant in the Central Spanish Pyrenees at an altitude of about 7,000 feet. Its identification with *N. moschatus* has been dealt with under that species. Since the eighties it has been regularly collected in quantity for horticultural purposes from this solitary habitat, and as no other station has been met with, it is to be feared that it is in danger of extinction. It appears to be one of the species that does not increase and rarely maintains itself under cultivation.

24. NARCISSUS TORTUOSUS Haworth (fig. 5D).

Narcissus tortuosus Haworth, Dissert. 179 (1803); Willk. and Lge. Fl. Hisp. i, 152 (1861); *N. cernuus* Roth, Catal. Bot. i, 43 (1797) ? non Salisb.; *N. moschatus* α Ker in Bot. Mag. No. 924 (1806); *Ajax longiflorus* Salisb. in Trans. Hort. Soc. i, 349 (1812); *A. moschatus* Haw. Narciss. Revis. 118 (1819); *A. tortuosus* Haw. in Phil. Mag. 131 (1830): Mon. 2 (1831); *A. cernuus* Sweet, Brit. Fl. Gard. Ser. II, ii, No. 101 (1833) ?; *A. moschatus* var. *tortuosus* (and var. *cernuus* ?) Herbert, Amaryll. 304 and 415–6 (1837); *N. tortuosus* hort. recent.

Pseudo-Narcissus hispanicus flore albo major Park. Par. 100 (1629); *N. sylvestris totus albus amplo calice* Theatr. Fl. Pl. 20 (1633) ?; *N. flore exalbido calice praelongo fimbriato* Rudbeck, Camp. Elys. 82, f. 18 (1701); *N. totus albus amplo nutante flore* Barrel. Pl. Obs. No. 954 (1714).

Icones. Barrel. *l.c.* No. 954; Bot. Mag. t. 924, as *N. moschatus* α.

Exsicc. T. Moore, cult., 1852, in Hb. Kew., as *N. cernuus*; Forbes Young, Cobham Lodge, 1857, in Hb. Kew., as *N. moschatus*; J. B. Syme, cult., 1864, in Hb. Manchester; Munby, cult., 1870 and 1872, in Hb. Kew., as *N. moschatus* α Curt.; Gadeceau, cult., 1905, in Hb. Mus. Brit.; Pugsley, No. 482; Sennen, Pl. d'Esp., No. 5634, Santander, 1925, as *N. major*.

Bulb of moderate size, ovoid, 30–40 mm. long, with pale whitish-brown scales. *Leaves erect*, 25–35 cm. long, *glaucous, slightly channelled*, not twisted, 7–10 mm. broad, attenuate above, obtuse. Scape 25–40 cm. long, erect, rather slender, compressed and 2-edged, finely striate. *Pedicel curved, short* (10–15 mm. long). *Flower rather large, slightly drooping*, 45–60 mm. long (excluding ovary), *sulphur-white* with perianth-tube shaded *with* yellow passing to green below and *very pale sulphur corona*, the whole fading to white, distinctly ginger-scented: *perianth-tube 12–20 mm. long*; *perianth-segments* oval-lanceolate or oval, obtuse-mucronate, slightly imbricated below, *incurved-spreading, much* spirally *twisted* and more or less laterally reflexed, *shorter than the corona*; *corona large and somewhat apically expanded*, longitudinally plicate, *with* subspreading margin cut into six *shallow, rounded*, subentire or more or less crenate *lobes*, transversely rugulose within. Filaments inserted 3–4 mm. above base of perianth-tube; anthers straw-coloured, with minute, dark apical spot. Stigma small, less lobed than in *N. moschatus*. *Capsule* 20–25 mm. long, *oblong-ellipsoid*, rounded-obtuse, *bluntly trigonous* with shallow furrows. Chalazal end of seed strongly appendiculate.

N. tortuosus, notable for its pale and beautifully symmetrical flower, is separable from *N. moschatus* by its stronger growth and broader foliage, and by its larger and less concolorous flowers, with regularly twisted and more spreading perianth-segments shorter than the corona. Of *N. cernuus* Roth no authentic material has been seen, but the plant represented in SWEET'S figure (*l.c.*) seems indistinguishable from *N. tortuosus*, unless perhaps for its narrower corona. There is an excellent drawing of a flower of *N. tortuosus* in the Salisbury Collection at South Kensington.

Like *N. moschatus*, this species has not been certainly known as a wild plant. HAWORTH originally gave "Hispania" as its habitat,

but no definite locality seems to have been recorded. There is now, however, in Herb. Mus. Brit., a gathering " Sennen, Plantes d'Espagne, No. 5634," collected near Santander by LEROY in 1925, which appears to be typical *N. tortuosus*, differing from most cultivated examples only by its rather smaller flowers and narrower leaves. It was named '*N. major* Curtis' by GANDOGER, but SENNEN notes its affinity with *N. moschatus*. The rediscovery of this species as a wild plant is of considerable interest.

There is little doubt but that *N. tortuosus* was cultivated at a very early date. The existence of a picture of its flower on a French fire-screen dated 1598 has already been mentioned in the account of *N. moschatus*. There is an interesting allusion to a Daffodil of this kind in the Curae Posteriores of CLUSIUS (p. 14), printed in 1611 after the author's death, which runs as follows: " *Pseudo-Narcissus flore albo varietas*— I have observed two differences in this plant; one with taller stem and more oblong flower with narrow tube; the other with lower stem, shorter leaves and laxer tube. Each has unequal and slightly fimbriate margins; no difference in leaves and bulb. But of the taller plant with narrower tube a plant was brought to me which bore a flower white indeed but tending to ochroleucous. PORRETUS similarly had a plant which bore a flower not nodding and pendulous like others of this kind, but standing out like the common *Pseudo-Narcissus*. The bitter winter of 1607 killed all the bulbs but a few."

In Britain *N. tortuosus* appears to have been in cultivation ever since the time of PARKINSON. It was well known to the botanists and gardeners of the first half of the last century, when according to SALISBURY it was commoner than *N. moschatus*. It is excellently figured in the Botanical Magazine (*l.c.*). The form identified by BARR with *N. tortuosus*, as shown in the Gadeceau exsiccata in Herb. Mus. Brit., appears to differ from the original plant of HAWORTH in having a rather more drooping flower with a broader corona. It seems to be the *N. tortuosus latifolius* of HARTLAND'S Little Booke of Daffodils, where there is a figure of the flower, but its origin is unknown. In many gardens *N. tortuosus* is an uncertain grower, and within the last two decades both it and *N. albescens* have been generally discarded by horticulturists in favour of modern hybrids. There are still a few plants of *N. tortuosus* on the mound at Kew, and it has not been entirely abolished by the Dutch growers.

25. NARCISSUS ALBESCENS nom. nov.

Ajax albicans Haw. Mon. 2 (1831); Sweet, Brit. Fl. Gard. Ser. II, ii, No. 145 (1833); Jordan, Icones Fl. Europ. iii, 1 (1903); *A. moschatus* var. *albicans* Herbert, Amaryll. 304 and 416 (1837); *N. albicans* hort. recent.
Pseudo-Narcissus totus albus Hort. Eystt. 2nd Ord. f. 2 (1613)?; *Narcissus albus oblongo calice* C. Bauh. Pin. 53 (1623)?; *P. maximus albidus* Park. Par. 100 (1629)?; *N. montanus sylvestris totus albus major* Merian, Floril. Ren. t. 135 (1641)?
Icones. Sweet, *l.c.* t. 145; Jordan, *l.c.* t. 356.
Exsicc. Hort. H.S., 1824, in Hb. Fielding, as *N. moschatus* (Dutch); T. Moore, cult., 1852, in Hb. Kew., as *N. albicans*; Gadeceau, cult., 1905, in Hb. Mus. Brit., as *N. albicans*.

Bulb rather large, ovoid, 35–50 mm. long, with pale brownish scales. *Leaves erect*, 35–40 cm. long, *glaucescent, nearly flat*, 10–12 mm. broad, obtuse. Scape 35–40 cm. long, erect, moderately stout, much compressed and 2-edged, striate. *Pedicel* rather slender, *curved, 20–25 mm. long. Flower rather large, nearly horizontal* or slightly drooping, 50–60 mm. long (excluding ovary), *sulphur-white with* perianth-tube shaded with yellowish-green and *pale sulphur-yellow corona*, the whole becoming whitish with age, faintly scented; *perianth-tube* rather narrow, *16–20 mm. long*; *perianth-segments* lanceolate-elliptic or oblong, acute or mucronate, slightly imbricated, *erect-spreading*, undulate and *twisted, rather shorter than the corona*; *corona long*, straight and *somewhat apically dilated*, longitudinally plicate, *with spreading, 6-lobed margin, the lobes rounded and crenate* but little crisped or plicate. Filaments inserted 4 mm. above base of perianth-tube. Style rather short; stigma 3-lobed. *Capsule* 20–25 mm. long, *narrowly ellipsoid*, attenuate at both ends, *subterete*.

N. albescens is related to *N. moschatus* and *N. tortuosus*, as may be seen from its pale-coloured flowers and ellipsoid fruit. It is a much larger plant than *N. moschatus*, with broader foliage, and larger, less pendulous and somewhat bicoloured flowers, with more spreading and less twisted perianth-segments, and a more expanded and lobed corona. *N. tortuosus* differs chiefly in its shorter pedicel, symmetrically twisted perianth-segments, and more obovate capsule.

N. albescens is not known as a wild plant. It may possibly be the *N. moschatus* reported in WILLKOMM and LANGE'S Flora Hispanica, i. p. 152, for Galicia, but a more likely habitat is the Pyrenees, for some of the Daffodils of that region distributed by BARR as *N. variformis* appear somewhat intermediate between *N. albescens* and *N. Pseudo-Narcissus*. The plant was evidently cultivated in Holland at the beginning of the nineteenth century, as shown by the example at Oxford cited above. Whether it was known to CURTIS and SALISBURY is uncertain—they may have confused it with *N. tortuosus*. And it was only distinguished by HAWORTH in 1831 in the Monograph, where the account is taken from plants he had noticed growing at Epsom in that year. HAWORTH'S diagnosis runs: "Corollae laciniis ovato-lanceolatis planiusculis albidis; corona crenata sulphurascente," and he gives as a synonym the above-cited plant of PARKINSON. HERBERT (*l.c.*) treated this plant as a variety *albicans* of *A. moschatus*, but in his "Postcript" it is raised to specific rank. It is included under the name *albicans* in the *N. moschatus* group in BARR'S list of 1884. In 1903 it was fully described and beautifully illustrated in the posthumous third volume of ALEXIS JORDAN'S Icones ad Floram Europae (*l.c.*). JORDAN knew it only as a cultivated plant. Prior to the Great War it was commonly included in nurserymen's catalogues, the bulbs sold being chiefly grown in Holland, but it now appears to be superseded by the modern garden hybrid 'Madame de Graaf.'

This species has hitherto been known as *A. albicans* or *N. albicans*, but the specific epithet is invalid owing to the existence of an earlier *N. albicans* Sprengel, Syst. Veg. ii. 45 (1825), which is a *Corbularia*. As no other valid name has been found, it has become necessary to rename the present species.

Series VI. *Bicolores*.*

Flowers of moderate size or rather large, bicoloured or yellow, with short perianth-tube and nearly erect flowering pedicel. Capsule obovoid, trigonous or not. Chalazal end of seed not appendiculate.

26. NARCISSUS BICOLOR Linn. (figs. 5E, 18).

Narcissus bicolor Linn. Sp. Pl. ed. 2, 415, excl. syn. partim (1762), et ejusdem herb.; Gouan, Illustr. Bot. 22 (1773); Haworth in Trans. Linn. Soc. v, 244 (1800); Ker in Bot. Mag. No. 1187 (1809); *N. tubaeflorus* Salisb. Prodr. Stirp. 221 (1796); *Ajax lorifolius* and *A. bicolor* Salisb. in Trans. Hort. Soc. i, 346 (1812); *A. bicolor* Haw. Narciss. Revis. 119 (1819); Phil. Mag. 132 (1830); Mon. 2 (1831); Herbert, Amaryll. 302 (1837); *N. Pseudo-Narcissus* var. *bicolor* Willk. and Lge. Fl. Hisp. i, 151 (1861); *N. Pseudo-Narcissus* subsp. *N. bicolor* Baker, Amaryll. 4 (1888); *N. Pseudo-Narcissus* subsp. *N. silvestris* race *N. bicolor* Rouy, Fl. Fr. xiii, 30 (1912).

Pseudo-Narcissus albus calice luteo Hort. Eystt. 2nd Ord. f. 2 (1613); *N. albus calice flavo moscari odore* C. Bauh. Pin. 52 (1623); Rudbeck, Camp. Elys. 69, f. 6 (1701); *Bulbocodium flore pallido, tubo flavo, serotinum* Ray, Hist. 1130 (1688).

Icones. Bot. Mag. t. 1187; Burbidge, Narcissus, pl. vi.

Exsicc. Hort. Soc. Hort. Lond., 1824, in Hb. Fielding; Pulteney, Gillingham, Norfolk, in Hb. Mus. Brit.; T. Moore, Chelsea, 1852, in Hb. Kew.; Forbes Young, Cobham Lodge, 1853, in Hb. Kew.; J. B. Syme, cult., 1864, in Hb. Manchester; Barr, cult., 1873, in Hb. Kew.; Gadeceau, cult., 1903 and 1905, in Hb. Mus. Brit.

Bulb large, ovoid, 50–60 mm. long, with brown scales. *Leaves erect*, 30–40 cm. long, *green* or glaucous, *nearly flat* and not twisted, 12–20 mm. broad, obtuse and not attenuate. Scape 30–40 cm. long, erect, rather stout, moderately compressed, 2-edged, finely striate. *Pedicel* rather slender, *nearly erect* but slightly curved above, 15–25 mm. long. *Flower rather large*, ascending or horizontal, 40–45 mm. long (excluding ovary), *bicoloured*, *whitish* or cream-coloured, *with* yellow, green-shaded perianth-tube and *golden-yellow corona*, almost scentless; *perianth-tube short and broad* (about 10 mm. long), slightly hexagonal; *perianth-segments cordate-ovate* or broadly ovate-elongate, acute or cuspidate, rounded and much imbricated below, spreading and somewhat hooded, slightly undulate but not twisted, rather shorter than the corona; *corona large*, very slightly ventricose below and *somewhat dilated above* (25–30 mm. across), more or less longitudinally plicate, *with* more or less *spreading margin*, which is *obscurely 6-lobed*, the lobes shortly rounded-obtuse or subtruncate, with coarse but shallow crenatures. Stamens and style relatively long; filaments inserted close to base of perianth-tube (1–2 mm. above); anthers without dark apical spot. *Capsule* 15–20 mm. long, *subrotund-obovoid* obtuse to sub-truncate, *scarcely trigonous*, 6-furrowed. Chalazal end of seed apparently not appendiculate.

β. *lorifolius* (Herb.) comb. nov. (fig. 19).

Ajax lorifolius Haw. Narciss. Revis. 119 (1819), excl. syn.; Mon. 2 (1831), excl. syn.; *A. bicolor* var. *lorifolius* Herbert, Amaryll. 302 (1837); *N. lorifolius* Schultes f. Syst. Veg. ed. 16, vii, 944 (1830), non Rouy, Illustr. Pl. Europ. Rar. i, 7 (1895), nec *N. Pseudo-Narcissus* var. *lorifolius* Gillot in Bull. Soc. Bot. Fr. xxx, 15 (1883); *N. rugilobus* hort. recent., non *A. rugilobus* Haw. Mon. 3 (1831).

Exsicc. Hort. Soc. Lond. Hort., 1834, in Hb. Lindley; Gadeceau, cult., in Hb. Mus. Brit., as *N. rugilobus*.

Leaves longer and narrower than in the type, 8–13 mm. broad. Scape stout. Pedicel only 10–12 mm. long. *Flower* 40–50 mm. long, *pale yellow*, with deeper-coloured tube, and full yellow corona; perianth-segments ovate-elliptic,

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* Flores mediocres vel majusculi, bicolores vel lutei, perianthii tubo brevi et pedicello florifero fere erecto. Capsula obovoidea, nonnunquam trigona. Seminis apex chalazam versus haud appendiculatus.

subobtuse-mucronate or acute, ascending, much imbricated, subequalling the broad corona; margin of corona obscurely and obtusely lobed, more or less plicate and undulate. Capsule broadly subglobose. Chalazal end of seed not appendiculate (at least in f. 'Emperor'). Otherwise as in the type.

N. bicolor is a very distinct plant that cannot well be confused in its typical form with any of its allies. Its bulb is relatively large, and its habit more robust than in any other species of the subgenus, excepting perhaps *N. leonensis*. Its broad, flat leaves are characteristic, so are also its markedly bicoloured flowers, with broad, imbricated, spreading perianth-segments springing from a very short tube, and a large but slightly lobed corona cut only into shallow, rounded-obtuse segments. But the most important feature is seen in the stamens, which are free almost to the base of the perianth-tube, as was pointed out in the Botanical Magazine (*l.c.*). It has not been possible to examine seeds of the typical species, but those of its hybrids 'Emperor' and 'P. R. Barr' are without the chalazal appendage, and if, as is probable, this peculiarity is general in *N. bicolor*, it is clearly an indication of affinity with *N. abscissus*. It has apparently not been practicable to determine the cytology of the typical form, but its hybrids 'Empress,' 'Horsfieldii," and 'Victoria' show 21, 22 and 22 chromosomes respectively.

The species does not appear to have been brought into general cultivation so early as most of the other Ajax forms. It is not mentioned by CLUSIUS, GERARD or PARKINSON, but it seems to be the *Pseudo-Narcissus albus calice luteo* of the Hortus Eystettensis, which is the *Narcissus albus calice flavo moscari odore* of C. BAUHIN'S Pinax. The figure in Hort. Eystt. is crude, but it depicts a plant with broad leaves, a spreading perianth, and a corona with a shortly lobed and spreading margin. Its flower is evidently bicoloured. The plant is thus much nearer in appearance to *N. bicolor* than to any form of *N. moschatus*, under which LINNAEUS placed BAUHIN'S name as a synonym. What is exactly intended by the term "moscari odore" may be uncertain, but most, if not all, of the forms of *N. bicolor* are but slightly scented and lack the strong 'daffodil' odour of *N. Pseudo-Narcissus*. BESLER'S figure, with BAUHIN'S name, is reproduced by RUDBECK (*l.c.*), who perhaps knew the plant at Upsala, where *N. bicolor* was grown, for the specimen in the Linnean Herbarium bearing this name is from the Upsala garden. This specimen, which is in good condition, consists of a flower and leaf, and was placed in the herbarium before 1767. It agrees well with LINNAEUS' brief description "Similis *N. Pseudo-Narcisso* sed petala alba, nectarium saturate luteum, majus; limbo patulo, undulato, crenato," and must be regarded as the type of the Linnean species. LINNAEUS cites two synonyms only for *N. bicolor*, both from the Pinax. The first of these represents a bicoloured Daffodil that cannot be exactly determined but is not at variance with the description; the second synonym belongs to the great yellow Spanish Daffodil and was cited in error by LINNAEUS, as pointed out under *N. hispanicus*.

Meanwhile, *N. bicolor* had been brought to the notice of RAY, who describes it in his Historia (*l.c.*) as *Bulbocodium flore pallido, tubo flavo, serotinum*. RAY received the plant from UVEDALE, and there is a specimen of it in the Sloane Herbarium at the Natural History Museum (H.S. 312, f. 56), furnished by UVEDALE, which matches the Linnean specimen and establishes its identity. In 1773 a somewhat fuller description of *N. bicolor* was furnished by GOUAN (*l.c.*), and in 1796 SALISBURY (*l.c.*) described as *N. tubaeflorus* a plant which he identified with RAY'S *Bulbocodium . . . serotinum* but did not recognize as *N. bicolor* L. This he said had been obtained by UVEDALE, through MAGNOL, from Montpellier, in France. KER-GAWLER described and figured the plant satisfactorily in 1809 in Bot. Mag. No. 1187 under its Linnean name, pointing out its differences from *N. major* and *N. Pseudo-Narcissus* ; and three years later SALISBURY (*l.c.*) sunk his name *N. tubaeflorus* under *A. bicolor* (*N. bicolor* L.). There are characteristic drawings of *N. bicolor* by SALISBURY in the collection at South Kensington. At the same time SALISBURY (without explanation or any description) separated *N. bicolor* of Bot. Mag. No. 1187 from the Linnean species and renamed it *A. lorifolius*, which he said grew in gardens round London, especially at Lewisham. I am quite at a loss to understand why SALISBURY dealt thus with *N. bicolor* of the Bot. Mag., the figure and description of which seem to agree well with the Linnean specimen and the characters assigned to the species by RAY and by LINNAEUS. The name *A. lorifolius* was subsequently taken up by HAWORTH (*l.c.*) to represent a plant with longer, narrower leaves and yellower perianth-segments than those of *N. bicolor* L., but it was never fully described nor based on any valid synonym other than the Bot. Mag. No. 1187. HERBERT shows *lorifolius* as a variety of *A. bicolor*, but furnishes no useful information ; and BAKER (Amaryllideae, p. 4) treats it as a form between *N. major* and *N. bicolor*. There is a specimen in Herb. Kew., labelled in BAKER'S handwriting " *N. lorifolius* Haw. Oxford Garden, 1887," with very broad leaves and a large, broad flower, which appears to be the garden hybrid ' Emperor.'

Before 1884 BARR had obtained a Daffodil which he considered identical with HAWORTH'S *A. lorifolius*, and a second one which he thought was *A. rugilobus*, another species established by HAWORTH in his Monograph, where it is placed between *A. lobularis* and *A. cambricus*, with a very inadequate description and no synonymy. These two plants, *A. lorifolius* and *A. rugilobus*, were placed together in BARR'S list of 1884 to form a group *lorifolius* ; and WOLLEY-DOD remarks (Gard. Chron. xxi. 642) that he could find no difference between them. The plant identified as *N. lorifolius* was not long retained by BARR, for it had disappeared from his annual catalogue before 1900, but *N. rugilobus* continued on sale till 1917, and formerly grew in my garden. It resembles a small ' Emperor,' as stated by BARR, who at one time described it as a native of Lincolnshire, where it had probably become naturalized. Its affinities lie with *N. lorifolius*,

as understood by British botanists, and it agrees sufficiently with HAWORTH'S brief account of this species. Its identification by BARR with *A. rugilobus* Haw. is evidently incorrect, for this is a deep yellow Daffodil, with longer perianth-tube and deeply lobed, spreading corona, connected with the group *Lutei*. GADECEAU, who cultivated BARR'S plant, comments on this discrepancy. It therefore seems best to treat BARR'S *rugilobus* as identical with *A. lorifolius* Haw., and to regard HAWORTH'S species as a variety of *N. bicolor* L., the differences being insufficient for specific distinction. This variety is no longer easy to obtain in horticulture, but the well-known garden form 'Emperor' has somewhat similar features, albeit larger in all its parts.

In 1883 the name *lorifolius* (as a variety of *N. Pseudo-Narcissus*) was adopted by GILLOT (Bull. Soc. Bot. Fr. xxx. p. xv) for a wild Daffodil collected in the Basses-Pyrénées, and he noted that its identity with *N. lorifolius* of British authors had been confirmed by VILMORIN. This plant was later described as *N. lorifolius* R. and S. by ROUY [Illust. Pl. Europ. Rar. i. 7 (1895)] and illustrated by photographed *e. siccata*. In the Flore de France it appears, under the name of race *N. lorifolius* of subsp. *N. moschatus*, as a widely spread Pyrenean Daffodil, while *N. muticus* Gay stands as a separate race of the same subspecies. The points of distinction between the two races seem somewhat slight, and GAY'S specimens at Kew agree less with the race *N. muticus*, as defined by ROUY, than with the race *N. lorifolius*, as depicted in ROUY'S earlier plate. The Pyrenean plant, from which it has been suggested that *N. bicolor* has been derived, is not identical with the British *N. lorifolius*, and still less with typical *N. bicolor*, and will be further dealt with under *N. abscissus*.

In his Revisio, under *A. lorifolius*, HAWORTH shows two varieties, β *breviflos* and γ *anceps*, which he saw in London, each on one occasion only, in 1809 and 1811 respectively. The former of these is raised to specific rank in the Monograph without any further detailed information. BARR succeeded in obtaining what he considered were these two plants, for they are included in his list of 1884, where *breviflos* is identified with *N. bicolor* of the Bot. Mag., but they are not shown in his sale catalogues from 1900 onwards. BAKER (*l.c.*) mentions *breviflos* under *N. bicolor*. I have been unable to trace any material of *A. breviflos*, but there are specimens of '*bicolor anceps*' from Hort. Soc. Garden Lond., 1834, in Herb. Kew. and Herb. Lindley. These show foliage 10 mm. broad and flowers resembling a small *N. bicolor* with a rather short pedicel. In his "Observationes" in Phil. Mag. ser. III, v. 1, 276 (1832) HAWORTH treats *A. anceps* as a species, which he says may be distinguished from *A. bicolor* by its narrower, non-glaucous foliage.

The typical form of *N. bicolor* seems to have been almost lost to cultivation in Britain during the present century, although still grown at Kew. It is most closely represented by the garden form 'Grandis,' and the well-known 'Empress' and 'Horsfieldii' are hybrids in which it is the predominant parent. LINNAEUS gives "In Europâ australi"

as the habitat of *N. bicolor*, and GOUAN locates it in the Pyrenees, but no exact native station for the typical species or for var. *lorifolius* is now known. The bulbs received by UVEDALE from Montpellier were probably not wild. In WILLKOMM and LANGE'S Flora Hispanica (*l.c.*) Galicia and the Western Pyrenees are cited, and BARR found what he regarded as *N. bicolor* in some quantity at Braga, in Portugal. There is a specimen in Herb. Kew., collected by SCHLOSSER in meadows at Kreutz and Slanje, in Croatia (as *N. Pseudo-Narcissus*), that seems to belong to var. *lorifolius*. It was presumably a naturalized plant, as indicated in the Flora of Croatia.

N. bicolor is a late-flowering species, but the variety *lorifolius* usually blooms in English gardens before the end of March, about a month earlier than the typical form.

27. NARCISSUS ABSCISSUS Schultes f.

Narcissus abscissus Schultes f. Syst. Veg. ed. 16, vii, 941 (1830), excl. syn. partim; *Ajax abscissus* Haw. Narciss. Revis. 116 (1819); Herbert, Amaryll. 305 (1837); *Oileus abscissus* Haw. Mon. 4 (1831); *A. muticus* Gay in Bull. Soc. Bot. Fr. vii, 308 (1860) and ix, 279 (1862); *N. Pseudo-Narcissus* var. *lorifolius* Gillot in Bull. Soc. Bot. Fr. xxx, p. xv (1883); *N. Pseudo-Narcissus* subsp. *N. muticus* Baker, Amaryll. 3 (1888); *N. lorifolius* Rouy, Illustr. Pl. Europ. Rar. i, 7 (1895), non Schultes f.; *N. Pseudo-Narcissus* subsp. *N. moschatus* race *N. lorifolius* Rouy, Fl. Fr. xiii, 32 (1912).

N. oblonga tuba rotunda quasi abscissa flavo flore Sweert, Floril. i, pl. 21, f. 4 (1612) ?; *N. flavus tubo rotundo* C. Bauh. Pin. 52 (1623) ?; *Pseudo-Narcissus angustifolius flore flavescente tubo quasi abscisso* Park. Par. 104 (1629); *N. hispanicus luteus amplo calice flore natante* Theatr. Fl. pl. 20 (1633) ?; *N. totus luteus oblongo calice et foliis pendentibus* Merian, Floril. Ren. t. 135 (1641) ?; *N. flavus tubo rotundo majore* Rudbeck, Camp. Elys. 69, f. 4 (1701) ?

Icones. Park. *l.c.* t. 107, f. 1; Rouy, *l.c.* t. 22, as *N. lorifolius*; Flor. Mag., N. Ser. 1876, t. 224, as *N. muticus* (f. perianthio patente); Gard. Chron., N.S. xxi, f. 121 (1884), as *N. bicolor*.

Exsicc. Gay, H. P., 1862, in Hb. Kew., as *A. muticus*; Gay, Carrés Chaptal, 1858, 1859 and 1863, in Hb. Kew., as *A. muticus*; Boutigny, Lourdes, 1854, in Hb. Kew., as *N. muticus*; Bordère, Gavarnie, 1869, in Hb. Kew., as *N. muticus*; Bordère, Gèdres, 1887, in Hb. Mus. Brit., as *N. muticus*.

Bulb of moderate size, ovoid, 25–35 mm. long, with brown scales. *Leaves erect* or recurved above, 30–35 cm. long, *green* or slightly glaucous, *nearly flat*, 10–12 mm. broad, obtuse. Scape 30–40 cm. long, erect, rather slender, moderately compressed and acutely 2-edged, finely striate. *Pedicel* rather slender, *erect* but curved above, 15–35 mm. long. *Flower rather large*, nearly horizontal, 45–50 mm. long (excluding ovary), *pale or sulphur-yellow with* orange-yellow tube sometimes shaded with green and *deep golden-yellow corona*; *perianth-tube very short* (8–12 mm.), obconic; *perianth-segments ovate-lanceolate* or lanceolate, obtuse-mucronate, acute or acuminate, generally rounded and imbricated below, undulate, subequal to and ascending over the corona or more rarely more or less spreading; *corona cylindrical*, straight, often relatively narrow, *rarely dilated above* (15–20 mm. across), somewhat longitudinally plicate, *with margin suberect, obscurely 6-lobed* with slightly crenate lobes, or with irregular, shallow crenatures, rarely with numerous small, blunt teeth. Filaments inserted 2–4 mm. above base of perianth tube; anthers without dark apical spot. Style rather long. *Capsule* 20–25 mm. long, *broadly ellipsoid* or obovoid, rounded-obtuse, *trigonous* and scarcely furrowed; sometimes in dwarf plants almost subglobose. Chalazal end of seed obtuse, not appendiculate. Chromosome number 14 (De Mol, ex Philp).

β. *serotinus* var. nov.

Ajax serotinus Jordan, Icones Fl. Europ. iii, 3 (1903).
Icon. Jordan, *l.c.* t. 363.

Scape much shorter than the leaves, 20–25 cm. long. Perianth-segments subrhomboid-ovate, waved, spreading; *corona narrow*, with slightly expanded, lobate-crenate margin. *Capsule* 25–30 mm. long, *oblong*, narrower than in the type. Filaments inserted 2–3 mm. above base of perianth-tube. Otherwise as in the type. [n.v.]

γ. *tubulosus* var. nov.

Ajax tubulosus Jordan, Icones Fl. Europ. iii, 4 (1903).
Icon. Jordan, *l.c.* t. 365.

Perianth-tube very short, only 6–7 mm. long; *perianth-segments narrowly lanceolate*, acute, not imbricated or twisted, conspicuously *exceeding the narrow*, slightly lobed and crenate *corona*. Stamens inserted close to base of perianth-tube (ap. fig.). Capsule 20 mm. long, obovate-ellipsoid, bluntly trigonous. Otherwise like the type. [n.v.]

δ. *graciliflorus* var. nov. (fig. 5F).

N. Pseudo-Narcissus subsp. *N. moschatus* race *N. muticus* Rouy, Fl. Fr. xiii, 31 (1912), non *A. muticus* Gay. *N. abscissus* hort. recent.
Icon. Gard. Chron. N.S. xxi. f. 120 (1884), as *N. abscissus*.
Exsicc. Pugsley, No. 486 (type); Burbidge, Hort. Ware (ex Pyrenees), 1876, in Hb. Kew.

Flower of moderate size, *drooping*, 40–50 mm. long, pale yellow with yellow or greenish perianth-tube and deep yellow corona; perianth-tube about 12 mm. long, rather narrow; *perianth-segments narrow*, not imbricated, as long as the corona or sometimes longer; *corona narrow, with suberect, subtruncate margin*. Filaments inserted 3–4 mm. above base of perianth-tube. Style long, sometimes nearly equalling corona. *Capsule strongly trigonous* with flat sides. Otherwise like the type.

N. abscissus is a very distinct Daffodil, characterized by its broad green foliage, very short, often orange-coloured perianth-tube with long, waved segments and long, cylindrical corona. It is also peculiar in its non-appendiculate seeds, a feature which it appears to share with *N. bicolor*. The typical form of *N. bicolor* is separable at a glance by the colouring of its flowers, but the variety *lorifolius* is not so easily recognized. From this, however, *N. abscissus* may be distinguished by its smaller bulb, slenderer scape with longer pedicel, narrower, less imbricated perianth-segments, longer, straighter corona, and trigonous, less obovate and less furrowed capsules. *N. abscissus* appears to be uniformly a late-flowering species.

N. abscissus is one of the clipt-trunk Daffodils known to the writers of the seventeenth century, and its main features may be deduced from the above-cited account of PARKINSON, for his figure, though crude and inaccurate, sufficiently depicts its general aspect, and PARKINSON notes that it bears a bicoloured flower and is a native of the Pyrenees. Although apparently figured by RUDBECK (*l.c.*), *N. abscissus* was not understood by LINNAEUS, who confused it with *N. moschatus* and cited C. BAUHIN'S name (*N. flavus tubo rotundo*) among the synonyms of that species. Similarly the British botanists of the early nineteenth century were not familiar with the plant, which seems to have been no longer in cultivation at that period. HAWORTH, in introducing the species *A. abscissus* in his Revisio, bases his name solely on PARKINSON, and adds "Vidi, at non florentem, in horto Hort. Soc. Lond." Later, in the Monograph, where this species is placed with four others

with truncate coronas in a separate genus Oileus, he remarks, "I have not seen any of these species and insert them with a view to excite enquiry after them." This does not quite agree with the statement in the Revisio. It is equally evident that HERBERT did not know *N. abscissus* as a living plant.

N. abscissus appears to have been cultivated in France during the last century, for it was as a garden plant that it was first noticed in 1860 (as *A. muticus*) by GAY (*l.c.*), who had observed its characteristic seeds. Then, two years later (*l.c.*), he identified with this garden plant a form sent from the Val d'Esquierry, above Luchon, in the Central Pyrenees. GAY does not seem ever to have furnished a full description of this species; in addition to the seed character, he simply mentions its broad leaves, reflexed flower, cylindrical and not obconic corona, and its late flowering. But there are good specimens of the plant at Kew, received from GAY, which with the brief description suffice to determine its identity with *N. abscissus*.

In 1883 a variety *lorifolius* of *N. Pseudo-Narcissus* was published by GILLOT (*l.c.*) and subsequently identified with *N. lorifolius* R. and S. by ROUY (*l.c.*). It has been pointed out under *N. bicolor* that this plant, which was wild in the Basses-Pyrénées, was erroneously identified with *N. lorifolius*, and as represented in ROUY'S plate, matched GAY'S own specimens of *A. muticus*. The *lorifolius* of GILLOT and of ROUY have, therefore, like *A. muticus* Gay, been made synonyms of *N. abscissus*.

The name *N. abscissus* does not appear in BURBIDGE and BAKER'S The Narcissus, but *A. muticus* Gay is inserted there as a variety of *N. Pseudo-Narcissus*. *N. muticus* was figured, with a brief description, by BURBIDGE in 1876 in the Floral Magazine (*l.c.*). *N. abscissus* is given in BARR'S List of 1884, where it is shown as under cultivation, and *N. muticus* appears there as a synonym. In the same year WOLLEY-DOD reported (Gard. Chron. xxi. p. 617) that *N. abscissus* was common round Gavarnie, in the Central Pyrenees, and that *N. bicolor* grew sparingly with it. The two plants are figured in this volume, and are the variety *graciliflorus* and typical *N. abscissus* respectively. In his Amaryllideae, p. 3, BAKER makes *N. muticus* a subspecies of *N. Pseudo-Narcissus*, with *A. abscissus* Haw. as a synonym. It has already been demonstrated that ROUY identified a form of *N. abscissus* with *N. lorifolius* R. and S. Another form is inserted in the Flore de France (*l.c.*) as a race *N. muticus* Baker, and of this "*N. abscissus* auct. nonnull. non. R. and Sch.!" is made a synonym. ROUY has been here misled by SCHULTES' addition (*l.c.*) of Barrelier No. 966 to the synonymy of *N. abscissus*, which is not in HAWORTH'S descriptions. This figure of BARRELIER'S depicts not an Ajax but a Queltia, and ROUY, relying on it for the determination of *N. abscissus* R. and S., has applied this name to a Queltia hybrid. The plant intended by ROUY as *N. muticus* is apparently the narrow-flowered variety *graciliflorus* of *N. abscissus*, which grows about Gavarnie and has been distributed by BARR and other nurserymen under the specific name. The prevalent form of the species, *A. muticus* Gay,

of which authentic specimens are in existence, has been treated as the specific type in view of the impossibility of determining the exact form of PARKINSON'S plant on which HAWORTH'S name *A. abscissus* was founded.

According to ROUY (Fl. Fr. xiii. 32) *N. abscissus* (*N. lorifolius* Rouy) inhabits the whole chain of the French Pyrenees, as well as the Corbières, and grows also across the Spanish frontier. GAY had it from the Central Pyrenees and GILLOT collected it in the Basses-Pyrénées. In 1925 I saw it in some abundance near Bigorre, and in the Val d'Oo, above Luchon. The varieties *serotinus* and *tubulosus* were obtained near Gèdres. The variety *graciliflorus* (*N. muticus* Rouy) is restricted, according to ROUY, to the Departments of Hautes-Pyrénées and Haute-Garonne, and is said to be common around Gavarnie.

N. abscissus was formerly imported by nurserymen in quantity from the Pyrenees, but is now not often seen in cultivation. The variety *graciliflorus* still grows sparingly on the mound at Kew.

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N.B.—The books to which an asterisk is affixed may be consulted in the Lindley Library at Vincent Square.