Zeitschrift: Candollea : journal international de botanique systématique = international journal of systematic botany

Herausgeber: Conservatoire et Jardin botaniques de la Ville de Genève

Band: 23 (1968)

Heft: 1

Artikel: Vallisneria spiralis L. in Egypt

Autor: El Hadidi, M. Nabil

DOI: https://doi.org/10.5169/seals-880338

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Mehr erfahren

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. En savoir plus

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. Find out more

Download PDF: 07.08.2025

ETH-Bibliothek Zürich, E-Periodica, https://www.e-periodica.ch

Candollea 23/1: 51-58. 1968.

Vallisneria spiralis L. in Egypt

M. Nabil el Hadidi
Botany Department, Faculty of Science
Cairo University

Résumé

Le *Vallisneria spiralis* L. a été découvert dans trois endroits en Egypte. Il a probablement été introduit par des oiseaux migrateurs dans la région du Nil.

Summary

Vallisneria spiralis L. has been found in three different localities in Egypt. It has probably been introduced into the Nile region by migratory birds.

Zusammenfassung

Vallisneria spiralis L. wurde in Aegypten an drei Standorten entdeckt. Die Art ist vermutlich durch Zugvögel ins Nilland eingeschleppt worden.

During a floristic study of the Aswan region (El Hadidi & Ghabbour 1967) the author has recorded *Vallisneria spiralis* L. from three closely situated localities around Aswan (map 1).

At Nag el Ghalab (1.7.1967), sterile specimens were found growing in the calm water of Aswan Western canal. Here the plant was growing mixed with and almost concealed by *Zannichellia palustris* L., *Potamogeton pectinatus* L. and a *Chara* sp. The specimens collected were sterile, the leaves were about 25 cm long, 1 cm broad and 4-5 nerved. A rich growth of *V. spiralis* L. was noticed also in several places south of and around Nag el Shalabab (3.7.1967) in the Aswan Eastern canal. Specimens collected from this region (fig. 1) had longer leaves, up to 30 cm in length and 1 cm broad. Only female flowers were collected. Finally, at El Khattara (4.7.1967), the plant was found growing mixed with *Potamogeton crispus* L. in the Nile itself a few meters from the shore. These specimens were sterile, about 20 cm long, somewhat torn by the current.

All the specimens collected agree with the descriptions given by various authors, e.g. Wright (1897) and Engler (1908). It also agrees well with the type specimen from Italy (no. 1157 b) in the Linnean Herbarium, of which the author has a photo.

Our material is different from the *Vallisneria* taxa known to occur in Africa, viz. *V. spiralis* var. *numidica* (Pomel) Maire & Weiller ex Maire (1952) which is endemic in Algeria, and *V. aethiopica* Fenzl ex Wright (1897) growing in tropical Africa. Both taxa have smaller flowers and leaves not over 10 cm long and about 4 mm broad.

V. spiralis L. has been claimed by authors of the last century to be a species of worldwide distribution in temperate and tropical regions of both hemispheres including Australia.

Modern authors are not in full agreement with this concept. Thus the *Vallisneria* species of North America occurring in the coastal prairies of Texas and considered by Cory (1937) as *V. spiralis* L. was claimed later (Gould 1962) to be *V. americana* Michx. Fernald (1950) also adopts the name *V. americana* Michx. for the *V. spiralis* of the previous editions of " Gray's manual ".

In tropical eastern Asia occurs another taxon: *V. asiatica* Miki (= *V. spiralis* L. var. *asiatica* Makino, non L. sensu auct. Japon.; compare Ohwi 1965). This was considered by den Hartog (1957) to be the same as *V. gigantea* Graebn. It seems to be a robust plant with rough stolons, up to 1 m long and 1-2 cm broad leaves. Den Hartog gave the distribution for this taxon as follows: southern and eastern Asia (Iraq, India, Indo-China, China, Japan & Corea), through Malaysia (Philippines and New Guinea) to eastern Australia.

In tropical America *V. neotropicalis* Maire-Victorin (Contrib. Inst. Bot. Univ. Montreal 46 : 34. 1943) was described as a species resembling *V. gigantea* Graebn. but differing by the ciliated margins of the leaves.

It is evident that *V. spiralis* L. and its allied taxa need a critical revision, a fact which is expressed by den Hartog who writes: " the differences between *V. gigantea* and other species are rather unsatisfactory and closer study of living material might show that the genus consists of only one racially differentiated species. A final conclusion can only be drawn on the basis of abundant living material from various sources ".

So far as the taxon collected recently at Aswan is concerned, it agrees in its characters with the true *V. spiralis* L. The geographical distribution of this taxon, in so far as the author has been able to trace it from the literature, is as follows:

ENGLAND: introduced in some western counties of England (Hutchinson 1955), recorded before 1930 from Worcestershire (Perring & Walters 1962); later naturalized in W. Gloucestershire, Worcestershire, S. W. Yorkshire and S. Lancashire (Clapham, Tutin & Warburg 1962).

FRANCE: rare in the central and southern part including the Mediterranean regions; naturalized around Paris and Lyon (Douin 1934).

ITALY: numerous records (Bertoloni 1854, Parlatore 1860).

SWITZERLAND: rare: lake of Lugano (Ascherson & Gürke 1889).

AUSTRIA: rare in Tirol (Hegi 1907).

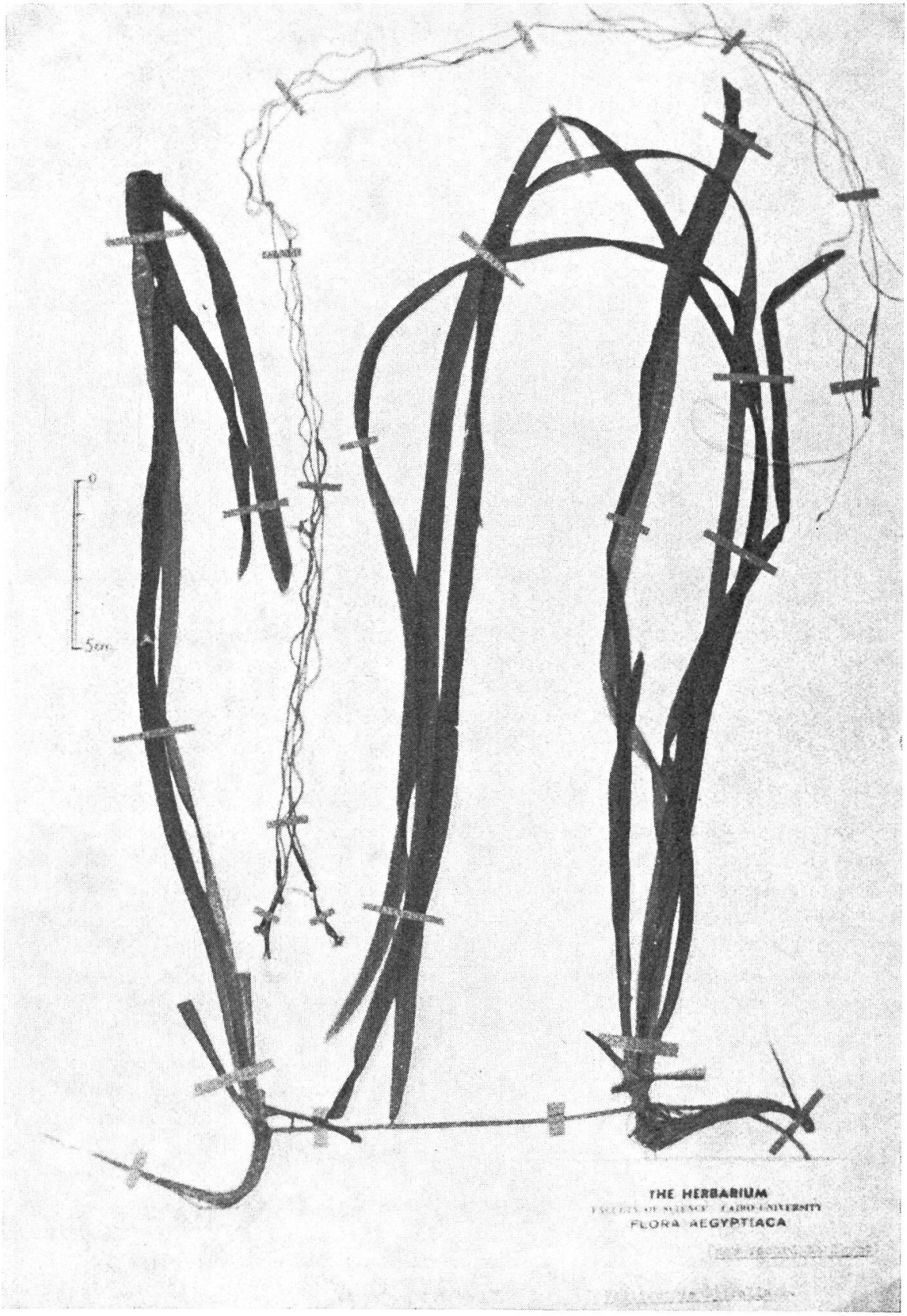


FIG. 1. — Herbarium specimen of *Vallisneria spiralis* L. collected at Nag el Shalabab north of Aswan.

CZECHOSLOVAKIA: only known as cultivated (Hejný 1950).

HUNGARY: only known as cultivated (Ascherson & Graebner 1913).

ROUMANIA: Mures-Ant, Oltenia, Bucaresti & Dobrogea (Nyárády 1966).

BULGARIA: lakes of the eastern regions and fresh water sources along the Black Sea (Jordanov 1963).

GREECE: Macedonia, middle Greece (Hayek 1932).

TURKEY: European Turkey, Istanbul region and west of Istanbul (Webb 1966).

USSR: in southern states, in Turkmenia in several lakes east of the Caspian Sea (Fedčenko & al. 1932).

INDIA: throughout India to Ceylon (Hooker 1888), Lahore district (Kashyap 1936); Delhi (Maheshwari 1963).

BALUCHISTAN: (Burkill 1909).

IRAN: central and north Iran (Boissier 1882, Parsa 1950).

IRAQ: lower Iraq (Zohary 1946, Rechinger 1964); Baghdad (Agnew 1962).

SYRIA: Homs, Aleppo (Mouterde 1966).

EGYPT: Aswan district (El Hadidi & Ghabbour 1967).

ALGERIA: rare in Senhadja, Constantine (Maire 1952, Quézel & Santa 1962); recently recorded in Tassili des Ajjer (Ozenda 1958).

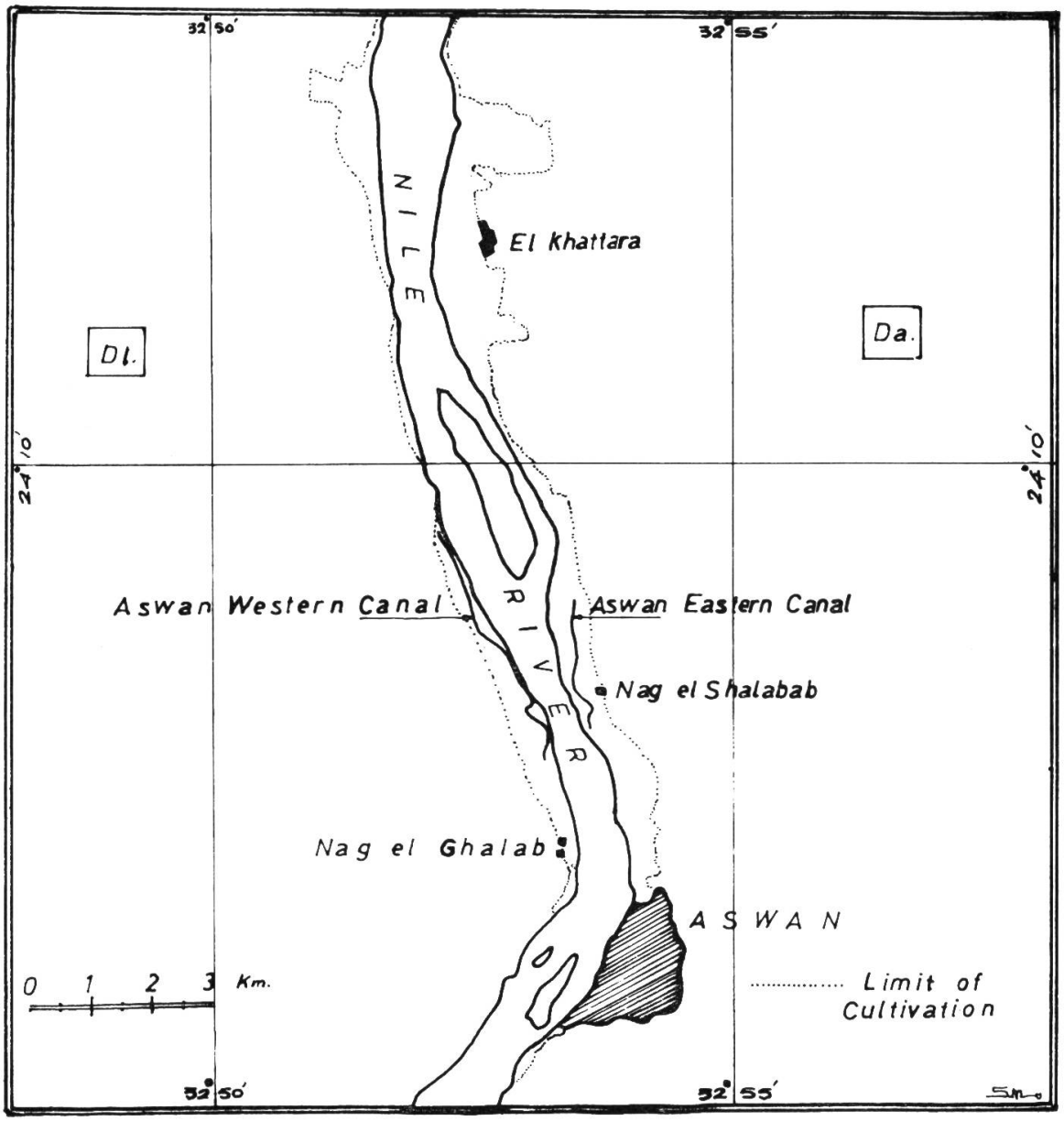
SUDAN: White Nile, Bahr el Ghazal, Bahr el Gabal (Wright 1897, Broun & Massey 1929, Andrews 1956).

V. spiralis L. seems to have its main distribution area in southern Europe including all Mediterranean countries, eastwards it reaches south Russia and continues throughout India and Ceylon.

Apparently the plant is rare in Africa. Its occurrence in Egypt, Sudan and tropical Africa is closely related to the Nile, its tributaries and sources. An incidental transportation of seeds by birds from its main area of distribution (Gillett 1965) may be the cause of its introduction into this area. Migrating birds which are known to fly along rivers usually come down from time to time to drink. At such times seeds embedded in mud adhering to the birds feet or kept undigested in their stomachs may eventually be released and thus have the chance to grow and give rise to new plants far from their original home.

Potamogeton perfoliatus L. and *P. trichoides* Cham. & Schlecht. which have been recently recorded as new additions to the Egyptian flora, have been claimed by El Hadidi (1965) to have been introduced via the migration route of some teals particularly the garganey teal *Anas querquedula* L. This bird has always been observed along irrigation canals and ponds in the area of the university at Assiut, where *P. trichoides* Cham. & Schlecht. was recorded recently for the first time. It is also observed among other migrants around the large fresh water network in the central part of Africa (Golding 1934).

The distribution area of *V. spiralis* L. including the African records are within the boundaries of the so-called " Caucaso-Zambesian " fan of bird migration (map 2), a similar condition to that of *P. trichoides* Cham. & Schlecht. (in El Hadidi 1965).



MAP 1. — Showing the collecting places mentioned in the text.

It may be noticed that the three hydrophytes recently recorded as new to Egypt, viz. the two *Potamogeton* species and *Vallisneria spiralis* are occurring in the southern part of the Nile Valley region of Egypt, a likely resting place for the birds on their migrating route southwards to central Africa.

The author wishes to point out that the description of the leaves given by Andrews (1956) for *V. aethiopica* Fenzl in Sudan (leaves 2-16 in. long) agrees better with those of *V. spiralis* L. Wright (1897) pointed out that *V. aethiopica* Fenzl of the Nile land is perhaps only a dwarf state of *V. spiralis* L. Podlech (1966) has another concept and considers *V. aethiopica* Fenzl to be a taxon with a limited geographical distribution.

Finally it may be added that the other two African taxa of *Vallisneria* viz. *V. spiralis* L. var. *numidica* (Pomel) Maire and *V. aethiopica* Fenzl are similar in several respects. Both are specialized forms with small and narrow leaves; they have also a very limited geographical distribution. Whether they are one and the same taxon needs a future investigation. But, if such is the case, the migration route of birds may have played its role for the transportation of seeds from north Africa where *V. spiralis* var. *numidica* occurs through the Sahara into central and south west Africa where *V. aethiopica* is found.

The author is greatly indebted to Professor Vivi Täckholm, for kind interest and help, also for the facilities offered in the Herbarium Library, Faculty of Science, Cairo University.

BIBLIOGRAPHY [1]

Agnew, A. D. (1962) Flora of the Baghdad district. *Bull. Coll. Arts Sci. (Baghdad)* 6 : 19-20.

Andrews, F. W. (1956) *The flowering plants of Sudan* 3 : 229. Arbroath.

Ascherson, P. & P. Graebner (1913) *Synopsis der mitteleuropäischen Flora* ed. 2, 1 : 612-613. Leipzig.

— & M. Gürke (1889) Hydrocharitaceae. In A. Engler & K. Prantl, *Die natürlichen Pflanzenfamilien* 2/1 : 238-258. Leipzig.

Bertoloni, A. (1854) *Flora italica* 10 : 297-300. Bononiae.

Boissier, E. (1882) *Flora orientalis* 5 : 3-4. Genevae et Basileae, Lugduni.

Broun, A. F. & R. E. Massey (1929) *Flora of the Sudan* : 372. London.

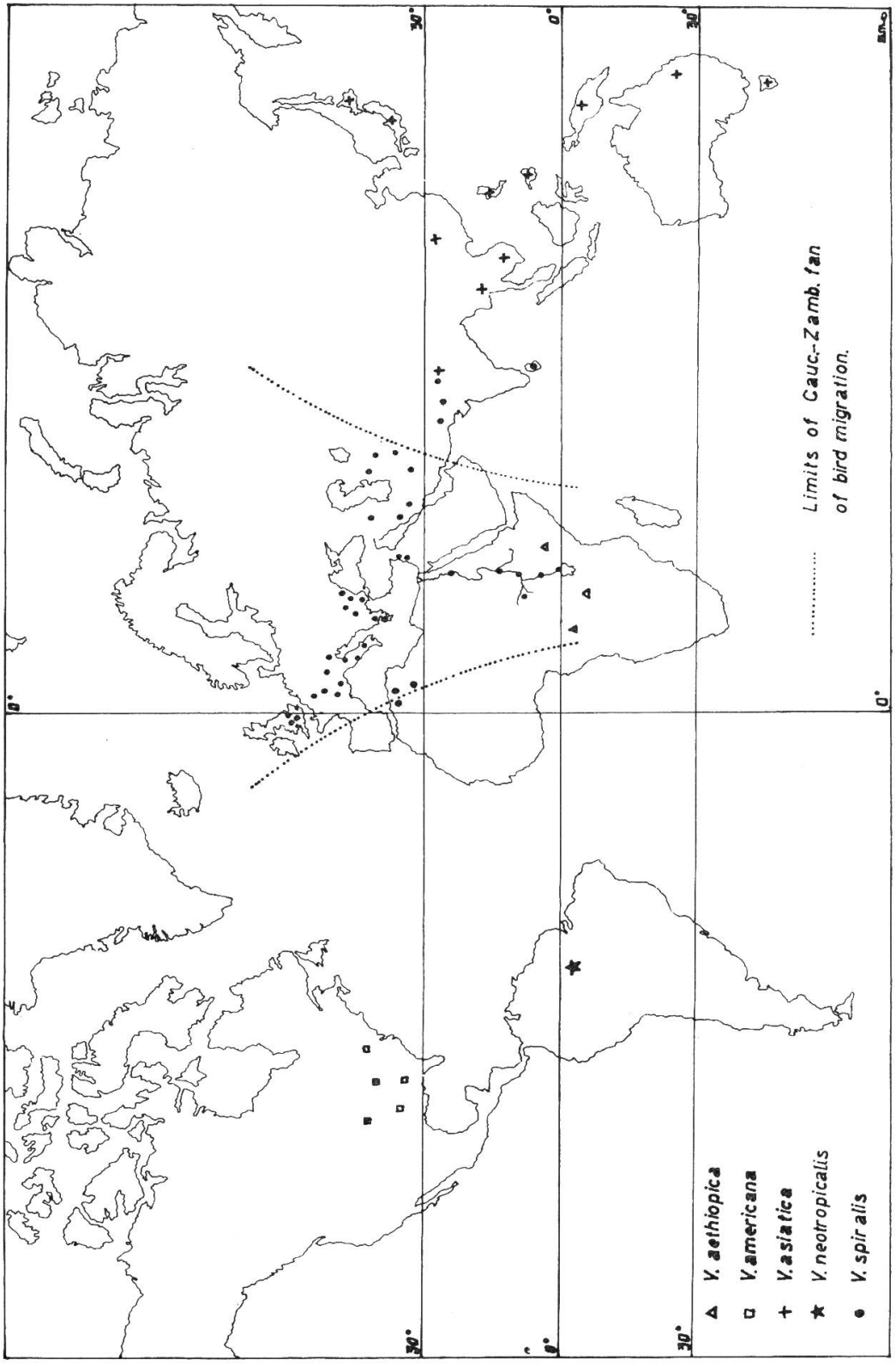
Burkill, I. H. (1909) *A working list of flowering plants of Baluchistan* : 72. Calcutta.

Clapham, A. R., T. G. Tutin & E. F. Warburg (1962) *Flora of the British Isles*, ed. 2 : 939. Cambridge.

Cory, V. L. (1937) Catalogue of the flora of the state of Texas. *Bull. Texas Agric. Exp. St.* 550 : 14.

Douin, R. (1931) In G. Bonnier, *Flore complète illustrée en couleurs de France, Suisse et Belgique* 11 : 38. Paris, Neuchâtel et Bruxelles.

[1] In the floristic literature, the pages and dates cited correspond to the sections dealing with *Vallisneria*.



MAP 2. — Showing the geographical distribution of *Vallisneria spiralis* L. in relation to its closely related species.

El Hadidi, M. N. (1965) Potamogeton trichoides Cham. & Schlecht. in Egypt. *Candollea* 20 : 159-165.

— & S. Ghabbour (1967) A floristic study of the Nile valley at Aswan. *Bull. Fac. Sci. Cairo Univ.* 43.

Engler, A. (1908) Die Pflanzenwelt Afrikas, insbesondere seiner tropischen Gebiete. In A. Engler & O. Drude, *Die Vegetation der Erde* 9/2 : 106-107. Leipzig.

Fedčenko, B. A., M. G. Popov, A. G. Borissova, A. I. Rajkova & R. J. Roževic (1932) *Flora Turkmenia* 1 : 44-45.

Fernald, M. L. (1950) *Gray's manual of Botany, eighth (centennial) edition* : 94. New York, etc.

Gillet, J. B. (1965) Trigonella laciniata L. in Zambia — a probable instance of long-distance transport of seeds by birds. *Kew. Bull.* 19 : 387-388.

Golding, F. D. (1934) Notes on some birds of the lake Chad area, N. E. Bornu. *Ibis* 1934 : 753.

Gould, F. W. (1962) Texas plants, a check list and ecological summary. *Bull. Texas Agric. Exp. St.* 585 : 17.

Hartog, C. den (1957) In C. G. G. J. van Steenis (ed.), *Flora malesiana* 5 : 387-389. Djakarta.

Hayek, A. (1932) Prodromus Florae peninsulae balcanicae. *Feddes Repert. (Beih.)* 30/3 : 8.

Hegi, G. (1907) *Illustrierte Flora von Mittel-Europa* 1 : 161-162. München.

Hejný, S. (1950) In J. Dostal, *Květena ČSR* : 1716. Praha.

Hooker, J. D. (1888) *The flora of British India* 5 : 660. London.

Hutchinson, J. (1955) *British wild flowers* : 822-823. Harmondsworth, Middlesex.

Jordanov, D. (1963) *Flora na Narodna Republika Bulgarija* 1 : 227. Sofija.

Kashyap, S. R. (1936) *Lahore district flora* : 241. Lahore.

Linnaeus, C. (1753) *Species plantarum* : 1015. Holmiae.

Maheshwari, J. K. (1963) *The flora of Delhi* : 331-332. New Delhi.

Maire, R. (1952) *Flore de l'Afrique du Nord* 1 : 225-226. Paris.

Mouterde, P. (1966) *Nouvelle Flore du Liban et de la Syrie* 1 : 31-32. Beyrouth.

Nyárády, E. I. (1966) In T. Săvulescu (ed.), *Flora republicii socialiste România* 11 : 42-44. Bucureşti.

Ohwi, J. (1965) *Flora of Japan (in English)* : 129. Washington.

Ozenda, P. (1958) *Flore du Sahara septentrional et central* : 127. Gap.

Parlatore, F. (1860) *Flora Italiana* 3 : 574-578. Firenze.

Parsa, A. (1950) *Flore de l'Iran* 5 : 4-5. Teheran.

Perring, F. H. & S. M. Walters (1962) *Atlas of the British flora* : 303. London & Edinburgh.

Podlech, D. (1966) In H. Merxmüller, *Prodromus einer Flora von Südwestafrika* 142 : 4. Weinheim.

Quézel, P. & S. Santa (1962) *Nouvelle flore de l'Algérie et des régions désertiques méridionales* 1 : 57. Paris.

Rechinger, K. H. (1964) *Flora of Lowland Iraq* : 32-33. Weinheim.

Webb, D. A. (1966) The flora of European Turkey. *Proc. Roy. Irish Acad.* sect. B, 65 : 72.

Wright, C. H. (1897) In W. T. Thiselton-Dyer (ed.), *Flora of tropical Africa* 7 : 5. London.

Zohary, M. (1946) *The flora of Iraq and its phytogeographical subdivisions* : 18. Baghdad.