

ON THE GEOGRAPHICAL DISTRIBUTION OF THE GENUS *ACRACHNE*

by

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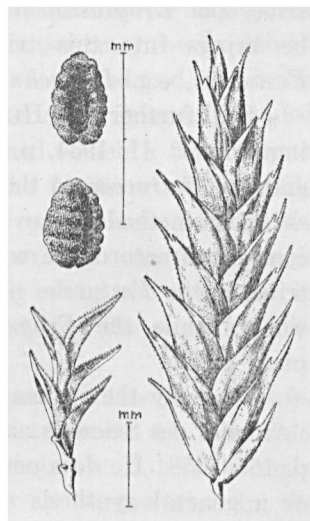
(National Herbarium, Leiden).

ROXBURGH described in his Flora in the year 1820 a very curious annual grass and placed it in the genus *Eleusine* as *E. verticillata* ROXB.. This grass has spikelets which agree in many characters with those of the genus *Eleusine*, especially as to the rugose grain with a caducous pericarp, but differing from *Eleusine* in the up to 20-flowered spikelets and in the lemmas with a three-cuspidate summit. The many-flowered spikelets give the plant more the habit of an *Eragrostis* and under this genus a specimen was mentioned by WALLICH in his Catalogue. There are in the characters of the spikelets many other differences with the genus *Eleusine* and with *Eragrostis*. KUNTH and STEUDEL indeed placed the plant under *Leptochloa* and there are still other opinions about this plant.

An advancement in this matter was the opinion of LINDLEY, who published in the year 1836 a new genus *Acrachne* WIGHT et ARN., in the second edition of his "Natural System of Botany", p. 381, based upon ROXBURGH's *Eleusine verticillata*. The name *Acrachne* was already given by WIGHT et ARNOTT as *Acrachne eleusinoides*, a nomen in WIGHT, Cat. no. 1760. This name was placed by STEUDEL in the year 1854 under *E. verticillata* ROXB., a name also accepted by NEES. The name *Acrachne*, although based upon a species which was validly published, was, however, not described by LINDLEY and the combination *A. verticillata* was not made by LINDLEY. At that time the genus *Acrachne* was therefore not valid.

It was, however, a very happy thought of CHIOVENDA to recognize our plant as belonging to a very distinct genus. CHIOVENDA had reasons to study this plant; although described by ROXBURGH from British India, it occurs in North-eastern Africa too.

In PIROTTA's "Flora della Colonia Eritrea" (Annuari del reale Istituto botanico di Roma, Anno VIII, 1898—1899), CHIOVENDA gave on p. 361 a very good description of the genus *Acrachne* WIGHT et ARN.. He too based the genus on ROXBURGH's *Eleusine verticillata* and published the combination *Acrachne verticillata* (ROXB.) LINDLEY, although LINDLEY did not publish this combination himself. At the same time CHIOVENDA gave some important data: "Genere che si stacca nettamente da *Eleusine* "ove fu collocato da parecchi autori per le "glume sterili caducissime 1-nerve, per le "fertili mucronato-aristate all'apice e coi due "nervi laterali sporgenti e formanti due dentolini acuti ai lati dell'aresta. Per il carattere della cariosside è assai prossimo al "genere *Dactyloctenium*, mentre per i caratteri delle glume è prossimo specialmente al "genere *Triraphis*. Alla maturità cadono le "glume sterili e fiorifere e le cariossidi lasciando sulla rachide le palee come avviene nel "Gen. *Eragrostis* sect. *Pteroessa*."



Acrachne verticillata (ROXB.) LINDL. Mature spikelet, rachis with persistent paleae and grains without the pericarp.

Although the racemes are quite sessile, bearing unilateral spikelets over its whole length as in the tribe of the *Chlorideae*, CHIOVENDA placed the genus *Acrachne* in the tribe of the *Festuceae*. I have formerly already given my critical observations on the tribe of the *Chlorideae*, noting that it is in its present state very unnatural (Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich, LXXIV, 1929, p. 130)

In recent times this tribe of the *Chlorideae* is more and more purified by eliminating those aberrant genera. By using only the characters of the inflorescence, *Acrachne* is to be accepted as a member of the *Chlorideae*, but this is certainly not a natural classification. Similar conditions occur in other genera, as, for instance, in *Digitaria*. The inflorescence of the genus *Leptoloma* is certainly very different from that of the common members of the genus *Digitaria*, but going over the whole genus, there are so many intermediate forms of the panicle, gradually passing from the effuse panicle of *Leptoloma* to the strictly digitate racemes in various species of *Digitaria* that it is quite unnatural to maintain *Leptoloma* as a genus. The fruits of the latter are undistinguishable from those of the common members of the genus

Digitaria. Of course, when such differences of characters in the panicle are supported by important differences in the floral-characters or in the fruits, we are justified to make discriminations.

Now going over such tribes as the *Chlorideae* and the *Festuceae* we find easily that floral characters are often not in accordance with other important differences and therefore STAPF's classification in "Flora Capensis" VII, 1897, p. 316 is more satisfying. He established a new tribe, the *Eragrostideae*, a tribe with 3-nerved flowering glumes and he brings into this tribe some genera formerly inserted under the *Festuceae*, e.g. *Diplachne* and *Eragrostis*.

Still further goes HUBBARD, who in HUTCHINSON's "Families of Flowering Plants" II, 1934, p. 210 transferred other genera of the *Chlorideae* and the *Festuceae* to the tribe of the *Eragrostideae*.

This method has an enormous advantage, the purifying of the tribes comes into accordance with geographical questions because the restricted tribe of the *Festuceae* now occurs only in the temperate regions of the world, while the *Eragrostideae* and the *Chlorideae* constitute a tropical group.

Recently the system of the grasses is treated by HENRI PRAT in the "Annales des Sciences naturelles", Sér. X, Botanique, Tom. XVIII, 1936, p. 165—258. He does not wish to give a new system but only a treatment or a general synthesis of all the facts hitherto known concerning the *Gramineae*. We can but underline his words that: "toutes les classifications des Graminées devront être regardées comme incomplètes et provisoires, exposées à être démenties à bref délai par un nouveau travail partiel".

HUBBARD accepts 38 genera in the tribe of the *Eragrostideae* (Cf. HOOKER's *Icones Plantarum* Sér. V, Vol. IV, 1936, Tab. 3319, p. 3, where a key to the genera is given). *Acrachne* is accepted as a monotypic genus, and placed next to *Eleusine*, the latter is thus transferred to the *Eragrostideae* too. The distribution of this genus is given as Tropical Africa and Asia, and Northern Australia. Being recorded from Abyssinia and Eritrea, British India and Tonkin and from Australia, there are large gaps in this distribution. Such a large hiatus occurred especially between the Asiatic continent and Australia, in which hiatus the species was never observed.

Very recently, however, Dr C. A. BACKER submitted to the Rijks-herbarium some grasses from the island of Soemba. Among them there was plenty material of *Acrachne verticillata*, collected already in the year 1924 on that island by the veterinary surgeon at Soemba. This is

the first time that *Acrachne* is recorded from Malaysia and at the same time the new habitat bridges the gap mentioned. We must, however, not forget that the genus has, in its various centres of dispersal (Abyssinia, British India, Tonkin and Australia), a rather limited distribution; in Tonkin it was found by BALANSA along the river Tu-Phap, the only locality hitherto observed and in Australia the grass is only known from North Australia and from Queensland, whereas it seems to be more common in the plains of British India (Gwalior, Kashmir, Punjab). It is very probable that this discontinuous distribution may be explained by accepting that in some localities the grass is introduced. It is an annual grass and the caryopsis is unlike that of other grasses provided with a deciduous pericarp, which soon is detached. Such a membranous pericarp swells up in water and in this way the fruits are more easily dispersed; the hard and coarsely rugose, grooved grain is afterwards, when becoming dry, easily removed from the pericarp. As the grass is growing in rough uncultivated places, especially along the rivers or in the vicinity of watercourses, it may be supposed that the seeds are distributed by birds over rather long distances.

I wish to memorate that another annual grass, viz. *Aristida Cumingiana* TR. et RUPR., has almost the same distribution as *Acrachne*. Occurring in North Africa (Senegal and Abyssinia), it has its main area from British India eastwards to China. It occurs also in the Philippines and was abundantly collected on the island of Celebes by Dr KJELLBERG in Aug. 1929 near the lake of Towoeti. Although more coherent in its distribution, it shows the same gap between British India and Abyssinia. It is not difficult to find other examples among the grasses. It seems to me that it is particularly the category of older genera consisting of perennial species with more primitive characters that have a similar distribution; the same category may also comprise annual grasses with primitive characters, although in the last group we cannot deny the possibility of recent introductions, especially in annual species of *Aristida*, a genus which is, in its much reduced spikelet-characters, not very primitive.