

# BRIEFER ARTICLES.

## CYNODON OR CAPRIOLA ?

### A BIBLIOGRAPHICAL STUDY.

WHILE engaged in a study of the Glumifloræ, as treated by the earliest botanical writers, we met not infrequently with the name "Capriola," which seemed to have been intended for some grass with digitate inflorescence. This name having been restored by Adanson as the earliest one for the genus now generally known as *Cynodon*, we felt induced to investigate the matter. Furthermore, *Capriola* has been revived by Dr. Otto Kuntze, and upon his authority it has been introduced into American systematic works of recent date, wherein the species appears as *Capriola Dactylon* Kuntze. It seems, however, as if the restoration of this name furnishes a good illustration of the difficulty sometimes confronting the naturalist who strives to determine what generic name ought to be adopted as the correct one for a certain plant, and since we have not been able to ascertain the true identity of the grass which formerly bore the name *Capriola*, we have thought that the present bibliographical sketch might be of some interest to American botanists. It is true that Adanson<sup>1</sup> restored the name, thinking it was identical with *Gramen dactylon* of the ancient writers, and his diagnosis, although very incomplete, does point toward *Cynodon*, which he thought was the plant which the ancient writers had in mind when they spoke of *Capriola*. Nevertheless, it is a very difficult matter to define *Capriola* as a definite genus, and at the bottom of the difficulty lies the fact that there are several other grasses with digitate inflorescence which were well known even to the earliest writers. It is quite natural that such grasses, unlike as they are to the majority of grasses, should attract attention at an early date, but it is also evident that the old botanists could not draw any clear distinction between the genera of such grasses, but simply referred to them as "finger-grasses." Some of these have later been recognized as *Panicum sanguinale*, *Cynodon*, *Chloris*, *Dactyloctenium*, *Eleusine*, *Paspalum*, etc.

<sup>1</sup> For references consult the bibliography appended to the article.



The fact is that Capriola was intended for *Panicum sanguinale* or for Cynodon, or perhaps for both together, but in no instance has this name been applied to any plant which can be identified with absolute certainty as the Bermuda grass, the genus Cynodon of Richard in Persoon's *Synopsis*. It is to be noted furthermore that Capriola is constantly preceded or followed by another name "Sanguinaria," sometimes written "Sanguinella," and it seems very significant that this last name is to be recognized as a modern popular one for *Panicum sanguinale*, viz., Paspale sanguin, Blut-grasz, and Blut-hirse. But Capriola is not preserved in any form and gives no clue to its identification. It is derived from *caper*, not as a diminutive, but simply as indicating a plant liked by goats. The occurrence of Cynodon in sandy sections of the old world, where goats are kept in large numbers, may well speak for Cynodon as the grass it was made for, especially since *Panicum sanguinale* does not thrive well in sandy soil, but prefers the uncultivated grounds near dwellings, vineyards, etc. The popular name of Cynodon is, as we remember, Chien-dent, Hahnenbein, finger-grass, Bermuda-grass, etc.

We might add, in order to explain the singular popular name of our *Panicum sanguinale*, that this grass was once known to possess "bloody" properties. Thus both Dioscorides and Pliny have described a grass: "cui in cacumine caulinum quini sunt aculei veluti digiti," about which they state that when the spikes were pressed into the nostrils a bleeding was produced, and yet this same grass was used in dressing wounds to stop bleeding. This grass was generally known, therefore, as "Sanguinella" by the Etruscans, while others called it Capriola. It is interesting to notice that while the former use of Sanguinella has evidently been abandoned, the latter was recommended by Loeselius as late as the beginning of the eighteenth century. This author attributes this effect to his so-called Blut-grasz, which according to his description must have been *Panicum sanguinale*. Whether Capriola, Sanguinaria, or Sanguinella were really intended as names for one single plant, it is unquestioned that the two latter have left a deeper trace in the history of economic plants than has Capriola. Such statements as are given by Dioscorides and Pliny concerning the medicinal properties of plants are of the greatest use in ascertaining the generic or specific name of some plant whose description is left too obscure. It seems, therefore, that by merely considering the name and properties of the plant in question, we might be justified in sup-



posing that *Panicum sanguinale* was the Sanguinella of the ancient writers. As regards Capriola, this name was generally used in connection with the former, as a local name for a plant, which at that time was considered identical with Sanguinella or Sanguinaria. However, there is a third name, "Dactylon," which was used by Pliny for a "finger-grass" possessing the same properties as Sanguinella, but there is no further clue to its identity. This plant "Dactylon" has evidently formed the basis for a number of finger-grasses by later writers, enumerated as *Gramen dactyloides*, etc., and it was one of these which Adanson considered as identical with Capriola. We see from these early data how very uncertain Capriola stands as a genus in botanical history, and we shall herein try to demonstrate that a consultation of the writers in the sixteenth and seventeenth centuries does not show any closer identity of Capriola with Cynodon.

Leonard Fuchs was perhaps the first writer who tried to identify Sanguinaria and Capriola, of which he makes mention in a chapter, "De Manna," in Brunfels' *Herbarum vivae eicones*. Both names are referred by Fuchs to the so-called "manna grass." Very few Gramineæ are described by Ruellius, but he knew Pliny's *Gramen aculeatum*, which he has discussed briefly. He mentions a new name for this grass, *Dens canis*, from which the later French name, "Chien dent" became derived; but he refers also to Capriola and Sanguinaria as synonyms. There is only one point in his very brief description of this grass which seems to throw some light upon its identity, and this is that the number of spikes is given as "quini senive." Cynodon is not known to produce more than four or five branches in the inflorescence, while it is very common to find seven in *Panicum sanguinale*. Although Lobelius has described a *Gramen Canarium* recognizable as Cynodon, and an *Ischaemon vulgare* which may be our Panicum, he does not give any reference to either Capriola or Sanguinaria. In accordance with Fuchs the "manna-grass" was adopted by Dodoens, who has not only described but even figured two species, *Gramen Mannæ primum* and *alterum*, both of which may readily be identified as *Panicum sanguinale* and *P. Crus-galli*. The figure of the first is so well executed that it makes any further comment unnecessary. We find here for the first time a true representation of *P. sanguinale*, and its geographical distribution was at that time given as Germany, Bohemia, Italy, and Belgium, where it was cultivated, but was found also naturalized in uncultivated fields, etc. One of its popular names



was at that time "Ros coeli" or "Himmel-dau," perhaps taken from its ability to retain the dew. This is the grass, Dodoens says, which Leonicens and Ruellius have identified as the one formerly known as Capriola or Sanguinaria. Only three years after Dodoens we find Sanguinella and Capriola as synonyms for *Gramen Mannæ* in the writings of Camerarius, followed by the very important statement that this grass, whose figure bears great resemblance to *Panicum sanguinale* but not to *Cynodon*, was eaten by the Germans.

There exists no record heretofore that the grains of *Cynodon* have ever been gathered for eating, inasmuch as this grass yields but a relatively small number of mature seeds, a fact that is perhaps due to its extensive propagation by stolons. No mention is made in the elaborate works of Clusius of either Capriola or Sanguinaria. He merely describes *Gramen legitimum* and *Ischaemon*, in which our two plants seem to have been badly confounded. In accordance with Camerarius, Dalechamps describes "Graine de Manna," the figure of which is very characteristic, and shows us *Panicum sanguinale* without any question. He enumerates as synonyms Capriola and Sanguinella, and states that this plant is cultivated in south Europe. He has also described and figured *Cynodon*, which he calls "Dent de chien," but does not with one word allude to its possible identity with the former. This is perhaps the earliest record of a popular French name for *Cynodon*, which in later years became transcribed into "Chien-dent." The manna-grass has thus begun to be more generally adopted for our *Panicum*, and becomes also used in England, where Gerarde takes it up as his "*Gramen Manna esculentum*, the dew-grass," the last of which was evidently derived from Dodoens' "Ros coeli." A second species is Gerarde's "*Ischaemon vulgare*, the cock's-foot grasse," which is figured and seems to represent *Panicum glabrum*, while in his *Gramen dactyloides radice repente* we are able to recognize *Cynodon*. Following Gerarde, Parkinson has also adopted "cock's-foot grasse" for *Panicum*, whose Latin name he gives as *Ischaemon sylvestre*, while he calls *Cynodon* *Gramen Canarium Ischaemi paniculis*. A singular confusion as regards the name is to be observed in Johannes Bauhin's *Historia plantarum*, where *Panicum sanguinale* is figured, but named *Graminis genus Dens caninus*. Bauhin states in a small paragraph, however, that he does not believe that the identity of this grass with Capriola and Sanguinaria, as quoted from the ancient writers, can be ascertained without question. These grasses were distinguished, nevertheless, by



the younger Bauhin, who named them "*Gramen dactylon folio latiore*" (Panicum), and "*Gr. dactylon fol. arundinaceo*" (Cynodon).

By bringing all these statements together, drawn up from the various writers as far back as we have been able to trace our Panicum and Cynodon, it does not appear that Capriola was ever intended for Cynodon alone, but rather for *Panicum sanguinale*. The constant quotation of Capriola and Sanguinaria together seems to indicate that these were merely synonyms and popular names used in Italy. There are only two instances where we have found these names used for plants outside of the Gramineæ, but this is of little importance. Dodoens also used "Sanguinaria" for a plant which is readily recognized as *Polygonum aviculare*; and Tabernæmontanus in the beginning of the seventeenth century enumerated both Capriola and Sanguinaria as species of his genus Coronopus, which are easily identified as *Plantago Coronopus* and *maritima*. All the other writers have agreed that both Capriola and Sanguinaria are grasses, and Adanson is correct in applying Capriola to a grass. But this author does not seem to have had any reason for assigning the name *Gramen dactylon*, this name being yet too obscure.

If in spite of its uncertainty Adanson's name Capriola is to stand for the mere sake of priority, the question remains whether it is really identical with Cynodon or with *Panicum sanguinale*. The diagnosis given by Adanson for Capriola is not so characteristic that one can recognize in this the genus Cynodon of Richard. "Couronne de la gaine des feuilles: poils; fleurs: épis digités; calice: plat par les côtés; corolle; sans arête," are characters that may just as well fit *Panicum sanguinale*. We have examined numerous specimens of this last and noticed that the ligule is often wanting and replaced by a small tuft of hairs, while the same organ in Cynodon is sometimes developed as a crescent shaped membrane. Furthermore, the empty glumes are also laterally compressed in *Panicum sanguinale*, and no awn is developed. Indeed, it seems as if Capriola has become more obscure through having been restored by Adanson than it was before. The adopting of Capriola must consequently result in confusion, which would easily be avoided by preserving Richard's well defined genus Cynodon, which no botanist could ever mistake for *Panicum sanguinale*. The fact that *Gramen dactylon* is a very obscure name, that Capriola of the old writers has been used for Panicum or for this and Cynodon together, and that Adanson's restored genus is not so certain, does not



encourage us to adopt *Capriola* for the mere sake of priority or for any other reason. It seems to be much more practical to use Richard's name, which is not antedated by any similar name, and which is well known to all botanists.—THEO. HOLM, *Washington, D. C.*

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ROOT PROPAGATION OF *IPOMŒA LEPTOPHYLLA*.

A FEW notes upon the root propagation of *Ipomœa leptophylla* Torr. may be of interest, as the facts herein presented are believed to be unpublished.

As is well known, this plant, whose habitat is the dry sandy regions of the plains, has a fleshy, spindle shaped tap root that often attains an enormous size. In adult plants, the surface of this is covered with a corrugated woody layer that hinders evaporation, while the inner tissue is stored with abundant food materials.

The propagation roots originate from various parts, more abundantly from the lower part of the vertical fleshy root, pass out horizontally for a short distance, then rise to near the surface of the ground several feet away from the mother plant, where adventitious buds are