

ON A NEW SPECIES OF POLYTOCA FROM JAVA

by

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The flora of the island of Java belongs, especially as to the family of the grasses, to the best explored ones. It was JUNGHUHN, who collected them extensively and his material was the basis of a fine enumeration by our countryman BUSE, in the year 1854. In modern times the grass flora of the island was thoroughly studied by Dr C. A. BACKER, who prepared not only very rich collections, but being familiar with the system of the Gramineae, gave in his "Flora van Java" a detailed study of this family with excellent descriptions and many very important data.

Unfortunately his species-concept and his nomenclature is not always up to date and it is to be hoped that a new modern Flora of Java can be prepared on the basis of the very important and rich material now at hand.

A region, explored so well, does not provide us with many new grasses, although in some less explored places new ones may be expected. It was therefore very interesting for me to learn from a letter from Dr BACKER that he had detected a new species of *Polytoca*. Having my publication on the Indian *Maydeae* at hand, Dr BACKER was convinced that the new grass was to be placed into the genus *Polytoca*, but at the same time represented a quite different and aberrant species. Dr BACKER was so kind as to communicate the whole material of this grass to me. Having studied it, I must admit that BACKER's grass is one of the most curious ones I ever saw. That this grass, which is rather plentiful at the locality, was overlooked by the various explorers of the region, finds its reasons in the fact that, when not in flower, it resembles a small sterile bamboo, agreeing not only as to its habit but also in many technical characters with many small members of the *Bambusaceae*. It is therefore not surprising that collectors who have seen

the grass in the field, considered it a sterile or juvenile bamboo, and since such bamboos are hardly to identify correctly, collectors did not gather them. Fortunately, Dr BACKER visited the locality when the plants were in flower and he saw the inflorescences, which did not at all belong to one of the members of the *Bambusaceae*. He placed the grass therefore into the tribe of the *Maydeae*. After my inspection I must confess that I do not know another tribe which comes into consideration, although there are some characters agreeing with the *Andropogoneae*.

The new *Polytoca* is a very curious and outstanding species. To be quite sure that this grass is actually a species of *Polytoca*, we need the ripe caryopsis. As is wellknown, my system of the *Maydeae* is based upon the characters taken from the ripe or well-developed fruit in connection with the form of the "fruit-cases". Unfortunately, no ripe fruit nor nearly ripe ones could be detected among the material of Dr BACKER; the material has inflorescences with exserted peduncles but also many others which are for a great deal concealed by the uppermost sheaths. Since the inflorescences consist of a few female spikelets at the base of the spike and the upper part is entirely male, we are obliged to damage all the spikes in search for developed caryopses. Not willing to act in this way and convinced that in such immature spikes, ripe caryopses may hardly be expected, I prefer to wait till better and riper material is collected. It is therefore to be hoped that at the type locality, where this perennial grass is rather plentiful, explorers of the island of Java may be able to collect the quite mature inflorescences for a more close inspection of the grains. It may turn out that this curious grass belongs even to a new genus of the *Maydeae*. For the time being, I have accepted Dr BACKER's identification, chiefly because the inflorescence has some resemblance to



Fig. 1. — Panicle of *Polytoca javanica*. $\times 2$.

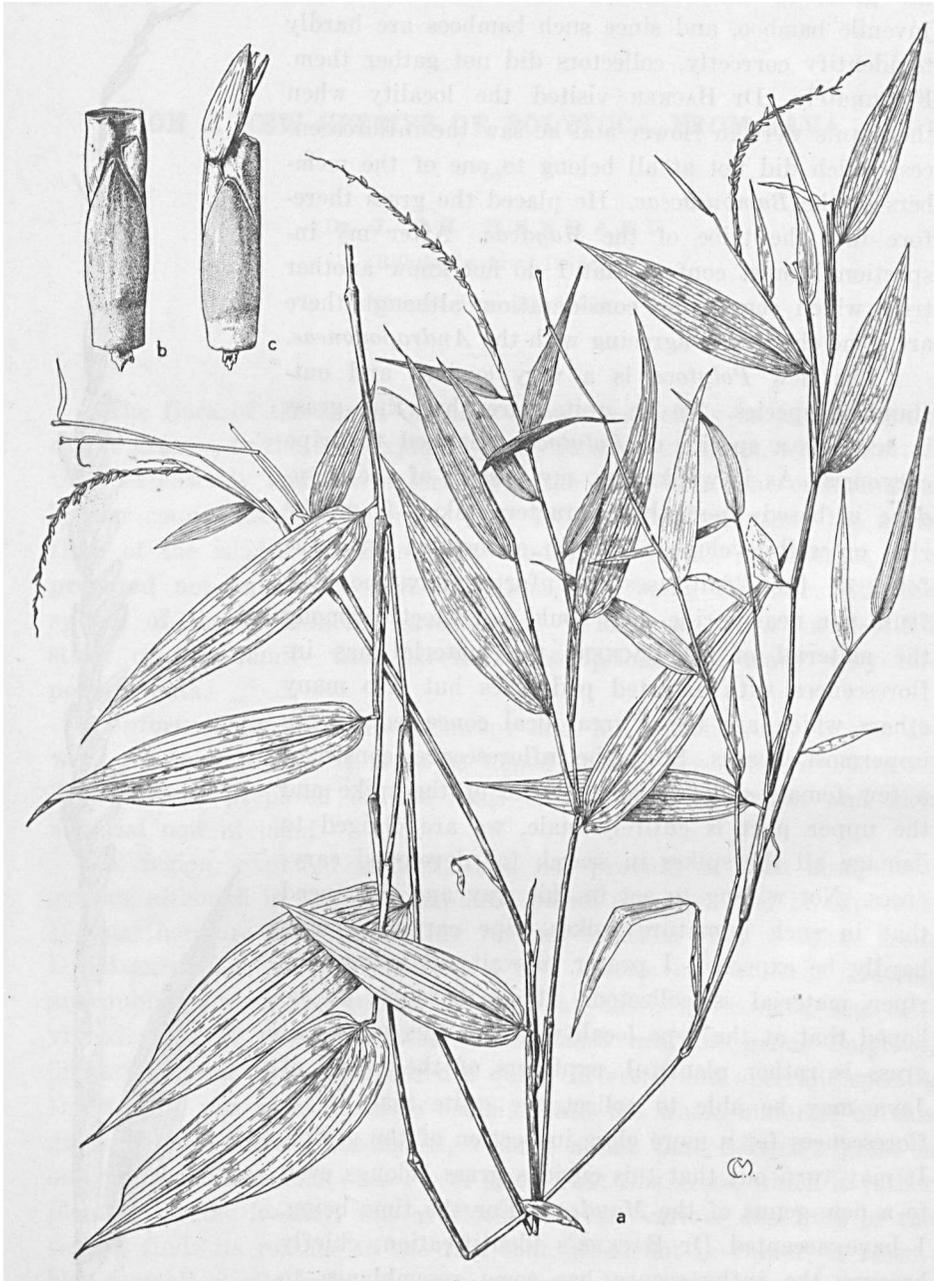


Fig. 2. — *Polytoca javanica* HENR. a. Habit, about $\frac{2}{5}$ X. b. Rhachis with female spikelet, about $3\frac{1}{2}$ X. c. id., with both spikelets, about $3\frac{1}{2}$ X.

that of the *Polytoxa macrophylla* BENTH., although many important differences are present. One of these differences I will discuss here more in particular.

Going over all the indian *Maydeae* hitherto known, e.g. if we look at the figures given in my paper, we see that, when the rhachis of the inflorescence breaks into pieces, each piece consists of a part of the rhachis with a female spikelet connected to it, moreover with a primary pedicel connected with the rhachis, bearing at its summit sometimes a male spikelet or a sterile one. Many of these characters remind us of those of the tribe of the *Andropogoneae*. The lower part of an inflorescence of *Polytoxa* much agrees indeed with that of a *Rottboellia* in the *Andropogoneae*, but the upper part of the inflorescence in *Rottboellia* does not differ from the lower one. As has already been said, the upper part of the inflorescence of *Polytoxa* is destitute of female spikelets. In the genus *Rottboellia*, the male spikelets are always attached to the primary pedicel.

At the same time it is very striking from the figures in my paper on the *Maydeae*, that the parts of the rhachis, when the spike is broken up, are always shorter or nearly as long as the spikelet itself. In *Polytoxa* and in all other genera of indian *Maydeae* the so-called "fruit-case" is chiefly formed by the spikelet or by the lower glumes. In the new *Polytoxa* we find the internodes of the rhachis much longer than the accompanying spikelet and the latter is partly imbedded in the hollow rhachis, a character well-known in *Rottboellia*.

In *Polytoxa* there are generally two kinds of panicles, the ultimate ones exclusively male, the lateral ones mixed and consisting of female spikelets below and male ones upwards. All the spikes of the new *Polytoxa* consist of mixed spikelets, purely male spikes are not present. From all these data taken here into consideration, we may conclude that our new species is a very aberrant member in the tribe of the *Maydeae*, being tentatively placed by me into the genus *Polytoxa*. It may prove in the future to belong to a distinct genus and certainly represents in many characters a missing link between the two tribes *Maydeae* and *Andropogoneae*.

The new species is described here as *Polytoxa javanica* HENR., nov. spec.

Perennis, suffruticosa, striete erecta, valde repetiter ramosa. Culmi arundinacei, glaberrimi, duri, teretes, unilateraliter applanati, internodiis copiosissimis, vulgo ad 10 cm longis; nodi glabri, tumidi, unilateraliter incrassati; vaginæ hiantes, vulgo internodiis breviores, inferne latae,

canaliculato-carinatae, valde striatae, superne angustatae, glabrae vel superne inter nervos punctulato-scabrae, marginibus interdum subpuberulis, superiores internodiis longiores. Prophyllum valde evolutum. Laminae breve petiolatae, pedicello 2 mm longo, inferiores basi subrotundatae vel in petiolum contractae, superiores brevissime petiolatae vel sessiles, basi angustatae, auriculae pilis albis ciliatae, pilis caducis; ligula brunnea, truncata, subscariosa, brevis, vix 1 mm longa; laminae virides, inaequilaterales, nervo medio crasso, nervis lateralibus 12—14 praeditae, marginibus inferne subundulatis, haud cartilagineis, oblongo-lanceolatae, sensim acuminatae, bene evolutae circa 10 cm longae ad 3 cm latae, laminae superiores vel praesertim eae ramulorum multo minores et angustiores. Inflorescentiae terminales vel laterales, isomorphae, pedunculus si bene evolutus exsertus, superne dilatatus et subcupulatis. Paniculae spiciformes, angustae, circa 8 cm longae, inferne foemineae, cylindraceae, vix 2 mm latae, superne masculae vel neutrae, laxae, ad 5 mm latae. Pseudospica inferne e spiculis foemineis paucis (haud raro 3) et spiculis masculis multis formata, rhachis fragilis, multiarticulatus, articulis inferioribus facie interiori distincte excavatis cum pedicellis liberis cavum pro recipienda spicula formantibus in quo gluma secunda omnino immersa est, recte disjungentibus, disjunctis, apice foramine profunde excavatis praeditis. Spiculae sessiles biflorae cum pseudocallo circa 1 mm longo glaberrimo a reliqua gluma depressione laevissimi separato, circa 7 mm longae, cavum exacte, praeter apicem, ocludentes; gluma prima lanceolata, subacuminato-obtusa, superne leviter bicarinato-alata, dorso convexa, minute punctulato-scabra, intus plurinervosa, extus nervis haud visibilis, gluma secunda lanceolata, subacuta, chartaceo-membranacea, haud alata, leviter sulcata, primam subaequans, indistincte 3—5-nervosa, glumae fertiles hyalinae circa 3-nervosae, leviter acuminatae, palcae triangulari-lanceolatae, angustiores, caryopsis non vidi.

J a v a: Resid. Besoeki, southcoast near Poeger, base of the Goenæng Watan-gan, limestone hill, 25 m above sealevel, locally common along somewhat shadowed paths, 1 April 1929, leg. C. A. BACKER no. 36799.

Typus speciei in Herb. Lugd. Bat. sub no. 938.297 — 134.