tante collection de documents scientifiques, sous forme d’échantillons d’histoire naturelle, de croquis, de notes sur le pays, sa flore, sa faune et ses habitants. Le plus riche trésor dont il a enrichi la science, est un registre d’observations météorologiques extrêmement complètes et consciencieusement rédigées.  

Tous les herbaries BRIART retrouvés dans les collections du Jardin botanique national de Belgique ont été récoltés au cours de l’expédition DELCOUMNE, mais les dates renseignées dans le Sylloge sont quelque peu fantaisistes; par ailleurs, le Sylloge renseigne une seule espèce, *Carpodina lanceolata* K. Schum., comme ayant été récoltée non pas au Katanga, mais à Mange, Kasai, vraisemblablement une escale sur la rivière Kasai au cours du voyage de retour. La carte indique le lieu de récolte avec les coordonnées géographiques et l’année de la récolte.

Sans doute l’intérêt de Paul BRIART pour la botanique lui fut-il transmis par son grand-père ALEXANDRE BRIART (décédé en 1896) qui fut chirurgien aux armées belgo-hollandaises, puis médecin de plusieurs charbonnages du Centre (STOCKMANS, 1901); botaniste amateur et ami de FRANÇOIS CREPIN, il était membre de la Société royale de Botanique de Belgique, comme son petit-fils dont le nom figure dans la liste des membres à partir de l’année 1880. En 1951, Mr. LÉON ADANT-BRIART, de la Hestre, a fait don au Jardin botanique des collections d’ALEXANDRE BRIART, soit quelque 600 plantes de Belgique et 250 autres, notamment de Suisse. A. BRIART fut, semble-t-il, parmi les premiers à étudier les collections de son petit-fils, comme le suggèrent notamment la description écrite de sa main qui accompagne le type de *Mellera briaerti*, ainsi que les commentaires, à l’encre noire, intercalés dans le cahier de P. BRIART, et concernant les no. 29, 59, 60 et 61.

Rappelons pour terminer que P. BRIART a écrit plusieurs articles sur des sujets variés, et notamment botaniques; on trouvera la plupart des titres dans JANSSENS & CATEAUX: 325–326 (1909).

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**INDIA IS THE NATIVE HOME OF THE PIGEONPEA**

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**ABSTRACT**

This paper adds information relevant to the question: “What is the native home of the pigeonpea?” This question was posed by OZA (1972) and evidence has accumulated in favour of an Asiatic origin of *Cajanus cajan* (L.) Millsp.

1. **ORIGIN OF THE PIGEONPEA**

OZA (1972) briefly reviewed some of the literature on the origin of the pigeonpea (*Cajanus cajan* (L.) Millsp.), a topic that has interested many scientists and on which there are many opinions. ICRISAT’s attention was drawn to this interesting question in the course of its crop-improvement programs and in particular while collection, conservation, and utilization of *Cajanus* genetic resources was in progress (VAN DER MAASEN, 1976). More-detailed reviews were prepared by DP (1974) and VERNON ROY (1976). The latter considered the dispute settled in favour of Indian origin. The large diversity and presence of many wild relatives in India (*Atylosia* spp. and other members of the subtribe *Cajuninae*) were the main reasons for various authors (VAVILOV, BURKILL, MURDOCK, (see DE, 1974 and LACKEY, 1977) to settle for an Indian origin. Absence of reports of wild plants of *Cajanus cajan* in India originally induced DE CANDOLLE (1853) and his several followers to favour an African origin.

BRUCHER (1977) still favours African origin because of the presence of a single endemic West African species, *Cajanus korstingii* HARMS.

2. **OCCURRENCE OF WILD PIGEONPEAS**

OZA (1972) appealed to naturalists to look for truly wild pigeonpeas, for truly wild *C. cajan* had not been found. Pigeonpeas growing wild were usually in circumstances where they had clearly escaped from cultivation, particularly in Africa. Pigeonpea, especially the perennial cultivars, is able to propagate itself. Very old perennial plants
can be found, e.g. in Kenya, mainly in mixed cultivation or in back-yard plots. In India these also occur as a backyard vegetable crop, especially in tribal areas. In the Cumbum area of Kurnool district, Andhra Pradesh, a remnant population is reported from cultivations abandoned longer than sixty years ago by settlers who were evicted after illegally occupying forest land (L. J. Reddy, pers. comm.). On one of my own trips I observed *C. cajan* growing wild at about 1000 m altitude on Horseley Hills in the Chittoor district of Andhra Pradesh. I found plants along the roadside, with seedlings clustered together where pods had dropped. Obviously, seeds could have been split when being transported along the road. Grazing is not intense along these roads. The plants grew in the bushes close to the road and deeper inside as well. Collett & Hemsley (1890) reported wild occurrence of pigeonpeas in the Shan Hills Terai of Burma. Subsequent occurrence is not reported in India from herbarium labels or otherwise, probably due to the fairly intensive use of the land for agriculture and grazing. Only in reserved forests do pigeonpea plants have a chance to survive on their own.

3. **Putative progenitor of Pigeonpea**

*Atylosia cajanifolia* Haines, described in 1926, is a wild species very similar to the pigeonpea, except for its large seed strophiole. The only generic character to separate *Cajanus* and *Atylosia* is the presence of a persistent seed strophiole. Nevertheless, seed strophioles are present in 144 of the 5800 pigeonpea entries available in the world collection of pigeonpea at ICRISAT. In March 1977 an ICRISAT expedition succeeded in finding *A. cajanifolia* on Balladilla Hill, Bastar district, Madhya Pradesh, at 1000 m altitude and this was only the seventh documented gathering since the species was first collected. It is known from three locations in Orissa and Madhya Pradesh only. The vernacular name is ‘bun arhar’ which translates to ‘wild pigeonpea’. This is presumably the link between *Atylosia* and *Cajanus*. Further evidence of its taxonomic state as a species separate from *C. cajan* is the existence of intergeneric crossing barriers, especially with pigeonpea as female parent. The reciprocal cross is not too difficult to obtain and in fact occurred naturally at ICRISAT Center. A plot of *A. cajanifolia* near pigeonpeas in the Botanical Garden produced hybrids through open pollination in addition to selfed seeds.

4. **Occurrence of Atylosia spp. and their relation to Pigeonpea**

The presence of many *Atylosia* species in India, some of which intercross with the pigeonpea, as well as the largest variation within the pigeonpea, points to an Indian origin. Northern Australia and Queensland have about ten species of *Atylosia*, most of which are endemic. *A. scarabaeoides*, which has the widest distribution of all the wild
species (India, Indo-China, Southeastern Asia, the Pacific Islands, Coastal Africa, and even Jamaica), is of apparent recent introduction outside Australasia. In West Africa, Cajanuss herstellii Harms is found, but its seed strachole makes it more properly an Atylosia. It looks similar to the pigeonpea but not so close as A. cajanifolia. A. trinervia (DC.) Gamble (South India) also has many similarities to pigeonpea; in 1977 'intergeneric' hybrids of A. trinervia with pigeonpea were obtained at ICRI. At. lineata, A. sericea, and A. scarabaeoides have earlier been successfully crossed with pigeonpea (Randy, 1973; De, 1974, who also reported cytological details). Remarkable homology exists between the chromosomes of Atylosia and Cajanus. All mentioned species and all other species ever studied in Atylosia and Cajanus have 2n = 22 chromosomes. In several hybrids pairing is almost entirely normal.

In the context of the questionable nature of most studied intergeneric hybrids in Leguminosae, Mc Comb (1975) considers the generic boundaries between Atylosia and Cajanus as misplaced. The hybrids obtained he judges to be of interspecific nature and, like most authors reporting cytology and hybridization, suggests a revision of the genera and a declaration of congruency.

5. ARCHAEOLOGICAL REMAINS

The often repeated reference to Cajanus seeds in an Egyptian tomb of 2400-2200 B.C. really points to only one seed identified as such (SCHWEINFURTH, 1884). Funeral offerings in this tomb at Dra Abu Negga (Thebes) of the 12th dynasty consisted of barley, wheat, pomegranate, lentils, two broadbean seeds, and the single pigeonpea seed. This is apparently the only report of pigeonpea material found in Egyptian burial vaults and VERNON ROYER (1976) suggested reexamination of this seed. As evidence for an African origin it is very weak. Reports of archaeological remains in India became available only recently, so De (1974) was not able to consider these. KAJALE (1974) reported an archaeological find of pigeonpea for the first time in India, at Bhokardan (Maharashtra). The seeds, of relatively small size, were found in deposits ranging in age from the 2nd century B.C. to the 3rd century A.D. From nearby Nevasa, two very small pigeonpea seeds were reported in Indo-Roman deposits dated 50 B.C. - 200 A.D. (Kajale, 1976-1977) but these must have been some other pulse as Kajale (1977) later states that Bhokardan yielded the only evidence available at that time.

As in Egypt, ancient remains are scarce but more are likely to be unearthed following closer scrutiny. The absence of very marked seed characteristics does not facilitate positive identification in the carbonised state.

6. LINGUISTIC EVIDENCE

De (1974) reviewed the linguistic evidence. The earliest Indian name 'tuvari' dates from the third to fourth century A.D., but this in Sanskrit seems to have been adopted from earlier Dravidian local names. The age of African names cannot be ascertained but they are certainly old. American local names were derived from the African ones and both African and European languages are involved. The name 'pigeonpea' originated in the Americas (PLUKENET, 1692; MILLER, 1754) where the seeds were reported to be more important for pigeons than for human nutrition. No earlier references to this name were available to the author. All early references to Asiatic vernaculars including 'Kayān', hence Cajanus, are devoid of the name pigeonpea. A complete listing of all vernacular names runs into several pages of text.

7. CONCLUSION

Floristic, linguistic and cytological evidence points to an Indian origin of the pigeonpea, from where it was most probably distributed to Africa at least two millennia B.C. Africa is definitely a center of (secondary) diversity, since we have found there some characters not present in India (ivy flower colour and true purple stems). From Africa it was imported into the Americas. Eastwards, the crop reached Indonesia from where other introductions may have been made into Madagascar. The map is adapted from the data of the authors indicated. Present-day exchanges of landrace material and
improved cultivars are taking place on a large scale between India, Africa, Latin America, and Australia. The details of taxonomy and vernacular names are under preparation by the author in a revision of the genera *Aristoloa* and *Cajanus*.

8. REFERENCES


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MERKMALS-INTROGRESSION

BEI FORSSKAOLEA (URTIACEAE)

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1. EINLEITUNG


Diese Tatsache bewog uns, die Untersuchung und Analyse des heute vorliegenden, reichen Materials im Rahmen einer Zulassungsarbeit am Institut für Systematische Botanik der Universität München durchführen zu lassen. Früheren ISOLDE Müller hat sich dieser Aufgabe angenommen. Ihre als Manuskript niedergelegten Ergebnisse bilden, in veränderter und erweiterter Form, die Grundlage für die vorliegende Arbeit.

2. BISHERIGE FASSUNG DER ARTE

Folgende bisher beschriebenen Sippen sind für Südwestafrika (und angrenzende Gebiete) in Betracht zu ziehen:

*F. candida* L.f., Suppl.: 245 (1781)

*F. viridis* HEBEB. ex WEB in HOOKER, Niger Fl.: 179 (1849)

*F. candida* L. f., var. *viridens* WEDD. in DC, Prodr. 16(1):235-256 (1869)


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