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The new genus *Ornichia (Gentianaceae)* from Madagascar

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Summary : A new genus in the *Gentianaceae, Ornichia* Klack., endemic to Madagascar, is described. Four new combinations are made, viz. *O. lancifolia* (Baker) Klack., *O. madagascariensis* (Baker) Klack., *O. madagascariensis* subsp. *pubescens* (Baker) Klack., and *O. trinervis* (Desr.) Klack. Typifications, maps, a key and drawings of all taxa are given.

Résumé : Un nouveau genre de *Gentianaceae*, *Ornichia* Klack., endémique de Madagascar, est décrit. Quatre nouvelles combinaisons sont établies : *O. lancifolia* (Baker) Klack., *O. madagascariensis* (Baker) Klack., *O. madagascariensis* subsp. *pubescens* (Baker) Klack. et *O. trinervis* (Desr.) Klack. Une clé de détermination est proposée ; tous les taxa sont typifiés, illustrés et localisés.

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INTRODUCTION

The majority of the species belonging to the genus *Chironia* L. occur in South Africa but some species are known from tropical Africa and Madagascar. In Madagascar *Chironia* has been thought to be represented by three species since BAKER (1881, 1882 and 1889) described *Ch. madagascariensis*, *Ch. pubescens* and *Ch. lancifolia*, respectively. These taxa, however, differ in several diagnostic characters from *Chironia*. Furthermore, they do not correspond to any known genus of *Gentianaceae* and are recognized as a separate genus, *Ornichia*. With these taxa excluded, *Chironia* is only known from Madagascar by two old sheets in Paris without specified locality (*herb. Du Petit-Thouars*). These specimens belong to the polymorphic species *Chironia linioides* L., endemic to the Cape Province, and are probably wrongly labelled. Except for the species of BAKER mentioned above one more taxon has to be transferred to *Ornichia*, viz. *Lisianthus trinervis* Desr. (1789). This species was transferred to *Tachiadenus* Griseb. by GRISEBACH in 1838. However, it seems to be a forgotten name, and HUMBERT (1963) in the revision of *Tachiadenus* for the "Flore de Madagascar" did not mention this taxon. The type specimen has proved to represent a fourth taxon within *Ornichia*. *Ornichia* is endemic to Madagascar and found in the eastern and southern parts of the island. Three species and one subspecies are recognized, viz. *O. lancifolia* (Baker) Klack., *O. madagascariensis* (Baker) Klack. with the subspecies *pubescens* (Baker) Klack., and *O. trinervis* (Desr.) Klack.

Material has been examined from BM, K, P and S (abbreviations according to HOLMGREN et al., 1981).

AFFINITY

Ornichia is closely related to the large and widely distributed genera *Exacum* L. and *Sebaea* R. Br. as well as to the Madagascan endemic *Tachiadenus*, but shows little affinity to *Chironia*. *Chironia* is characterized by e.g. unilocular ovary with parietal placentation and coriaceous anthers with endothecial walls with a net of thick bars. *Ornichia* on the other hand has bilocular ovary with axile placentation, a character which refers this genus to the subtribe *Exacinae* of GILG (1895) comprising *Exacum, Cotylanthera* Bl., *Sebaea* R. Br., *Lagenias* E. Mey. and *Belmontia* E. Mey. of which the latter two usually are included in *Sebaea*. *Cotylanthera* is a small Asiatic genus of specialized saprophytes without chlorophyll and seems to be more distantly related to *Ornichia* than *Exacum*, *Sebaea* and *Tachiadenus*. The latter genus was put by GILG (1895) in the tribe *Tachiinae* but is probably better placed in *Exacinae* (see also KLACKENBERG, 1985). *Ornichia*, *Sebaea* and *Tachiadenus* all have delicate anthers with the walls of the endothecial cells with more or less parallel bars, not reticulate as in *Chironia*. These delicate anthers open by longitudinal slits. On the contrary, the anthers of *Exacum* are coriaceous and open with apical pores. The endothecial cell walls in *Exacum* are furnished with small perforations (KLACKENBERG, 1985 : 15, fig. 5). The anthers of *Ornichia* are furnished with an apical outgrowth (gland) which is also a prominent feature of many species of *Sebaea* and *Tachiadenus*. On the other hand the seed morphology of *Ornichia* is similar to that found in many species of *Exacum* and *Tachiadenus*, i.e. small cubical seeds with star-shaped testa cells (Pl. 1, *B*).

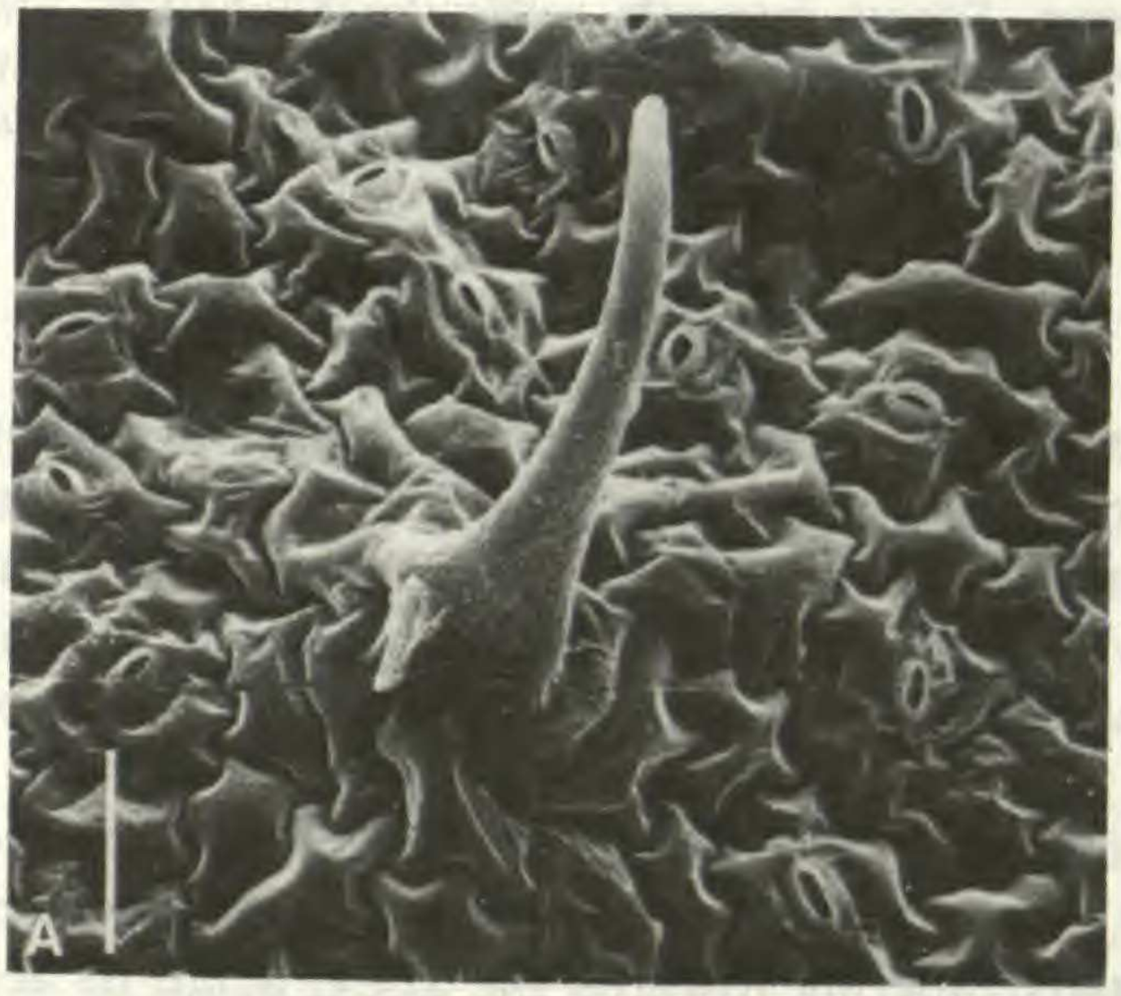
Ornichia is more or less hairy, which distinguishes it from the other genera in *Exacinae* and in fact from most other species within the family. The hairs are simple and one-celled (Pl. 1, *A*). Pubescence is rare in *Gentianaceae* but is present in *Orphium* E. Mey., a monotypic South African genus differing from *Chironia* mainly in this character. The pubescence in *Ornichia* and *Orphium*, both formerly described as *Chironia*, is, however, most probably a parallelism. No closer relationship between *Orphium* and *Ornichia* can be suggested as they differ in all the characters discussed above, e.g. the structure of the ovary, the seeds, and the anthers, as well as in other characters.

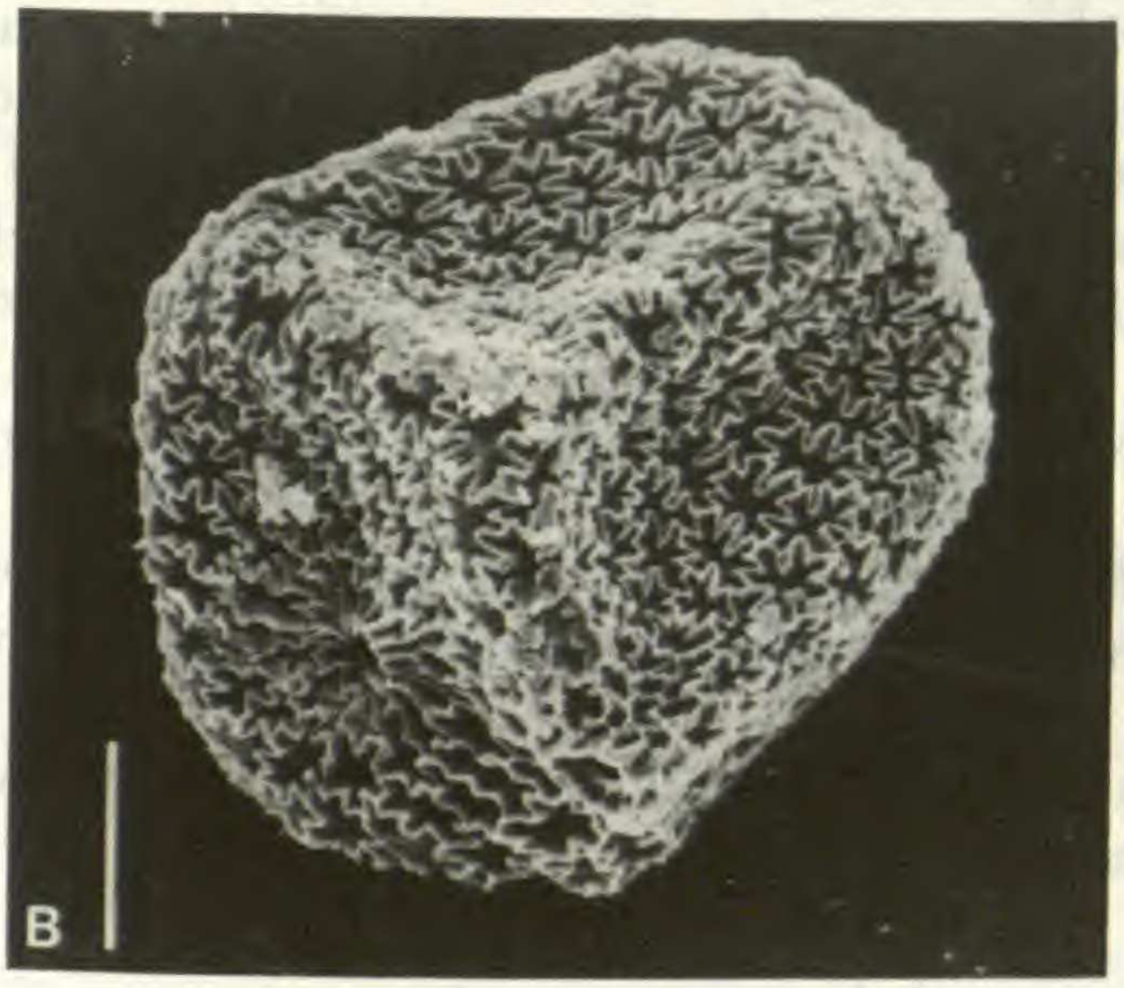
From the discussion above it can be concluded that *Ornichia* is not closely related to *Chironia* but shares several characters with different genera within the tribe *Exacinae* as well as with *Tachiadenus*, but differs by the unique character of being hairy. Consequently, it is recognized as a separate genus.

ORNICHIA Klack., *gen. nov.*

Genus novum generatim caulibus et foliis plus minusve pubescentibus et praesertim a Chironia *ovario biloculari, ab* Exaco *antheris rimis dehiscentibus et a* Sebaea *floribus caeruleis differt.*

Herba vel fruticulus moderate vel multo ramosus, plus minusve pubescens ; rami non nisi ad parte caulis superiore vel inordinate dispositi, nonnunquam numerosi e basi divergentes, erecto-patentes vel divaricati. Caulis subquadrangularis vel plerumque teres, quadrilineolatus ; lineae in paribus oppositis duobus approximatioribus. Folia decussata, integra, anguste elliptica vel elliptica vel late ovata, basi





Pl. 1. — **Morphological details** (SEM) : **A**, **A'**, leaf hairs (A, *Ornichia madagascariensis* ; A', *O. lancifolia*) ; **B**, seed of *O. madagascariensis* ; **C**, poilen grain of *O. trinervis*. (Scales : A, A', 40 μm ; B, 100 μm ; C, 4 μm). — A, *McWhirter 226* (P) ; A', *Perrier de la Bâthie 9042* (P) ; B, *Bosser 18606* (P) ; C, *Decary 10043* (P).

sensim in petiolum brevem attenuata, non amplexicaulia, acuta vel obtusa, (uni-) vel tri-parallelinervia. Flores pentameri, actinomorphi, solitarii vel plerumque in cymis mono- vel dichasialibus terminalibus vel axillaribus. Calyx non nisi ad basim coalescens ; lobi ovati vel anguste ovati vel triangulares, basaliter superpositi, apicem versus gradatim decrescentes, acuti vel acuminati, carinati vel anguste alati. Corolla petalis basaliter connatis et in aestivatione contortis, violacea vel pallide violacea vel caerulea ; tubus aliquantum longus ; lobi patentes, elliptici vel obovati, acuti vel obtusi vel apiculati, cum parte vel tubo toto in statu fructificanti decidui. Stamina in tubo a distantia sub sinibus inserta ; fila aliquantum longa vel brevissima, libra ; antherae non exsertae et in annulo plus minusve cohaerentes aut exsertae et librae, plus minusve oblongae, basaliter profunde fissae, ad apicem appendici parva, rectae sed saepe in sicco plus minusve curvatae praesertim ad apicem, rimis ad basim dehiscentes. Pollinis granula isopolaria, radiale symmetrica, 3-colporatia, prolata, parva axe polari 17-22 μm et diametro aequatoriali 15-20 μm ; exinium striato-reticulatum ; striae perforatae. Ovarium bicellulare ovulis in

placentis axilibus numerosis. Stylus filiformis, rectus. Stigma integrum vel leviter bilobatum. Fructus capsularis, ellipticus vel plerumque ovatus vel late ovatus, apicem versus attenuatus, coriaceus et septicidale bivalvis ; septum partim coriaceum. Semina numerosa, minuta, angulata ; cellulae testae parietibus stellatis.

TYPE-SPECIES : *O. lancifolia* (Baker) Klack.

A moderately to much branched erect, ± hairy herb or shrublet ; branches at the upper part only or irregularly set along the stem, sometimes many diverging from the base, erecto-patent to divaricate. Stem subquadrangular to usually terete, 4-lineolate ; lines situated close to each other in two opposite pairs. Leaves decussate, entire, narrowly elliptic to elliptic to broadly ovate, attenuate at the base and tapering to a short petiole, not amplexicaul, acute to obtuse, (1-)3-parallel-nerved.

Flowers pentamerous, actinomorphic, solitary or usually in terminal or axillary mono- or dichasial cymes. Calyx only at the very base coalescent ; lobes ovate to narrowly ovate to triangular, overlapping at the base, gradually tapering towards the apex, acute to acuminate, keeled to narrowly winged. Corolla with the petals basally connate and in aestivation contorted, violet to pale violet to blue ; tube rather long ; lobes spreading, elliptic to obovate, acute to obtuse or apiculate, deciduous in fruit together with part or whole of the tube. Stamens inserted in the tube at a distance below the sinuses ; filaments rather long to very short, free ; anthers not exserted and ± cohering to each other in a ring or exserted and free, ± oblong, deeply cleft at the base, with a small appendix at the apex, straight but often when dry ± bent especially at the apex, dehiscing by slits to the base. Pollen grains isopolar, radially symmetrical, 3-colporate, prolate, small with polar axis 17-22 μm and equatorial diameter 15-20 μm ; exine striato-reticulate ; striae with perforations. Ovary 2-celled with many ovules on axile placentas. Style filiform, straight. Stigma entire to faintly bilobed.

Fruit a capsule, elliptic to usually ovate or broadly ovate, attenuate at the apex, coriaceous and septicidally 2-valved ; septum partially coriaceous. Seeds numerous, minute, angular ; testa cells with star-shaped walls.

Ornichia is an anagram of *Chironia*.

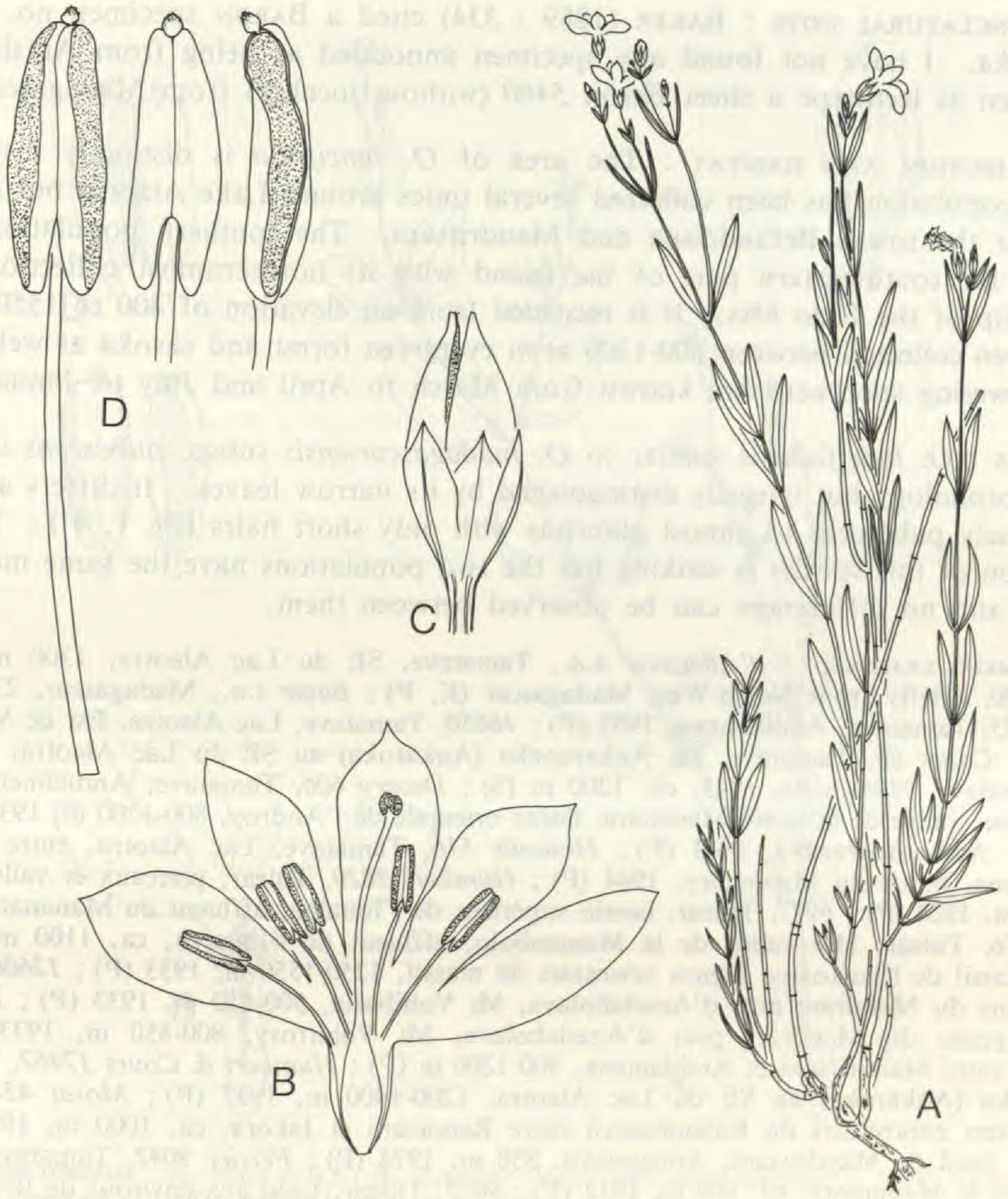
KEY TO THE SPECIES

1. Leaves narrowly elliptic ..... *O. lancifolia*
1′. Leaves elliptic to ovate to broadly ovate 2
2. Corolla tube long (up to 9 mm), anthers included ..... *O. trinervis*
2′. Corolla tube short (ca. 5 mm) ; anthers protruding ..... *O. madagascariensis*

Ornichia lancifolia (Baker) Klack., *comb. nov.* — Pl. 2 ; 5, *A*.

— *Chironia lancifolia* BAKER, J. Linn. Soc., Bot. 25 : 334 (1889).

LECTOTYPE (here selected) : *Baron 5480*, chiefly from North-West Madagascar (K ; iso-, P).



Pl. 2. — **Ornichia lancifolia** : **A**, habit × 0,5 ; **B**, dissected flower with calyx removed × 3 ; **C**, flower in fruit with corolla removed × 3 ; **D**, anthers × 12. (A, *Decary 16445*, P ; B-D, *Homolle 516*, P).

Erect herb or shrublet, 15-80 cm high, often branched from the very base with erect branches or branched at the upper part of the stem only, erecto-patent. Leaves usually narrowly elliptic but often revolute especially when dry and then linear, 15-60 × 2-5 mm, acute, (1-) 3-nerved, slightly hairy to almost glabrous. Calyx lobes 4-6 × 1.5-2.5 mm. Corolla : tube 5-9 mm long, longer than the calyx, cylindrical below but vase-shaped above, violet to blue or white ; lobes 5.5-9 × 2-5 mm. Anthers exserted, free, not prominently papillate along the margins of the slits or at the apex, 3-3.5 mm long. Capsule 4.5-6.5 × 2.5-3.5 mm.

NOMENCLATURAL NOTE : BAKER (1889 : 334) cited a BARON specimen no. 5480 from Antsihanaka. I have not found any specimen annotated as being from Antsihanaka but have chosen as lectotype a sheet *Baron 5480* (without locality) from Madagascar at Kew.

DISTRIBUTION AND HABITAT : The area of *O. lancifolia* is distinctly disjunct. The northern population has been collected several times around Lake Alaotra but also further north near the towns Befandriana and Mandritsara. The southern population is known from the far south-eastern part of the island with its northernmost collection from the southern tip of the Isalo Mts. It is recorded from an elevation of 400 to 1550 m but has usually been collected between 800-1200 m in evergreen forest and savoka as well as in prairies. Flowering specimens are known from March to April and July to January.

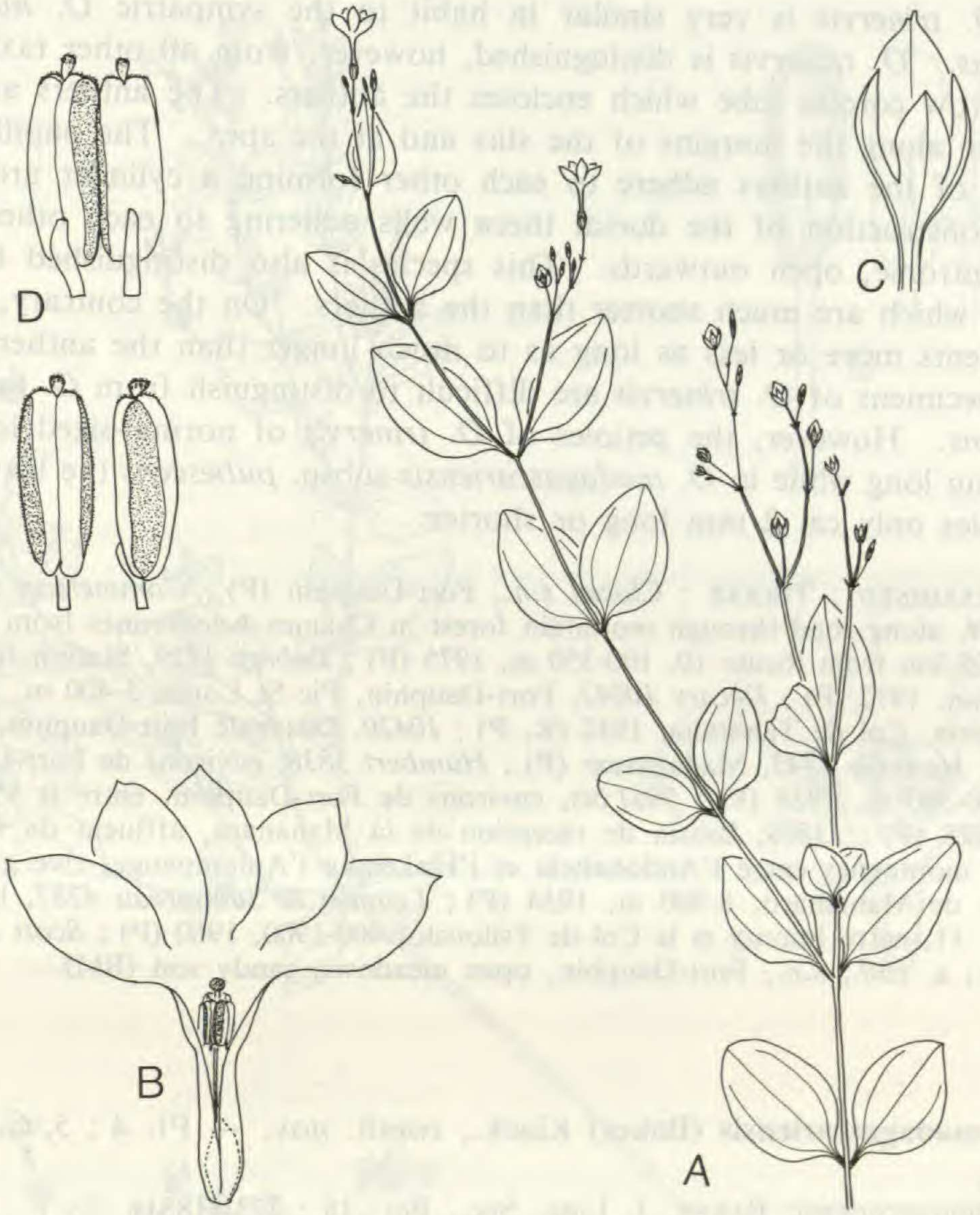
NOTES : *O. lancifolia* is similar to *O. madagascariensis* subsp. *pubescens* in habit and flower morphology but is easily distinguished by its narrow leaves. It differs also in being only sparsely pubescent to almost glabrous with only short hairs (Pl. 1, *A'*). The disjunct distribution of this species is striking but the two populations have the same morphological variation and no differences can be observed between them.

SPECIMENS EXAMINED : *d'Alleizette s.n.*, Tamatave, SE du Lac Alaotra, 1300 m, 1905 (P) ; *Baron 5480*, chiefly from North-West Madagascar (K, P) ; *Basse s.n.*, Madagascar, 23.5.1931 (K) ; *Bosser 1045*, Tamatave, Andilamena, 1953 (P) ; *16650*, Tamatave, Lac Alaotra, Est de Vohimenakely, 1962 (P) ; *Cours 66*, Tamatave, Mt Ankaraoaka (Ankaroka) au SE du Lac Alaotra, 1300 m (P) ; *2733*, Tamatave, Nickelville, 1945, ca. 1200 m (S) ; *Decary 606*, Tamatave, Andilamena, 1921 (P) ; *9427*, Tulear, vallée de la haute Mananara, limite orientale de l'Androy, 800-1200 m, 1931 (P) ; *16445*, Tamatave, Ambatondrazaka, 1941 (P) ; *Homolle 516*, Tamatave, Lac Alaotra, entre Menasaka et Ambodiriana, bords du Maningory, 1944 (P) ; *Humbert 2820*, Tulear, plateaux et vallées de l'Isalo, 400-1000 m, 1924 (P) ; *6977*, Tulear, bassin supérieur de l'Ionaivo, affluent du Mananara, ca. 1000 m (P) ; *12126*, Tulear, Hte vallée de la Manambolo, affluent de l'Ionaivo, ca. 1100 m (P) ; *12259*, Tulear, Massif de l'Ivakoany, pentes orientales du massif, 1250-1550 m, 1933 (P) ; *12600*, Tulear, vallée moyenne du Mandrare près d'Anadabolava, Mt Vohibaria, 500-810 m, 1933 (P) ; *12747*, Tulear, vallée moyenne du Mandrare près d'Anadabolava, Mt Vohitrosy, 800-850 m, 1933 (P) ; *18019*, Majunga, entre Mandritsara et Andilamena, 900-1200 m (P) ; *Humbert & Cours 17462*, Tamatave, Mt Ankaraoaka (Ankaroka) au SE du Lac Alaotra, 1200-1400 m, 1937 (P) ; *Morat 4248*, Fianarantsoa, premiers contreforts du Kalambatitra entre Ranotsara et Iakora, ca. 1000 m, 1973 (P) ; *4520*, Majunga, Seuil de Mandritsara, Antsiasiaka, 850 m, 1974 (P) ; *Perrier 9042*, Tamatave, Est du Lac Alaotra sur le Maningory, ca. 800 m, 1912 (P) ; *9073*, Tulear, Isalo aux environs de Benenitra, bassin de l'Onilahy, 1910 (P) ; *9074*, Tulear, Isalo, environs de Benenitra, Mt Ambatolahy, ca. 1000 m, 1910 (P) ; *14984*, Majunga, entre Mandritsara et Andilamena, 1922 (P) ; *Ramarokoto 5049 RN*, Tulear, Canton de Behara, Distr. Androy, 1953 (P) ; *Saboureau 5049*, Tulear, Behara-Androy, 1953 (P) ; *Seyrig 374, 374B*, Tulear, environs d'Ampandrandava, entre Bekily et Tsivory, 1200 m, 1942 (P) ; *s. coll. 6047 RN*, Tamatave, Distr. Ambatondrazaka, Canton Imerimandroso, R.N. 3, 1953 (P) ; *Herb. Jard. Bot. Tananarive 5893*, Tulear, env. du Massif d'Ampandrandava, 1200 m, 1943 (P) ; *2937, 3029*, Tamatave, Analanonomby, forêt du Nord du pays Sihanaka, 1937 (P) ; *5497*, Majunga, Befandriana Nord, Andrafiabe, 1942 (P).

Ornichia trinervis (Desr.) Klack., *comb. nov.* — Pl. 3 ; 5, *B*.

— *Lisianthus trinervis* DESR. *in* LAM., Encycl. méth. 3 : 659 (1789).
— *Tachiadenus trinervis* (DESR.) GRISEB., Gen. sp. Gentianearum : 201 (1838).

HOLOTYPE : *Commerson s.n.*, Madagascar (P-JU 6990).



Pl. 3. — **Ornichia trinervis** : **A**, habit × 0,5 ; **B**, dissected flower with calyx removed × 3 ; **C**, flower in fruit with corolla removed × 3 ; **D**, anthers × 12. (A-D, *Debray 1729*, P).

Erect herb or shrublet, up to ca. 1 m high ; branches irregularly set along the stem, erecto-patent. Leaves elliptic to usually ovate, 20-40 × 10-20 mm, acute to obtuse, 3-nerved, hairy. Calyx lobes 3-4.5 × 1-1.5 mm. Corolla : tube 5-9 mm long, much longer than the calyx, cylindric from the base to the lobes, violet to blue ; lobes 4-6 × 2-3 mm. Anthers not exserted, ± cohering to each other in a ring, prominently papillate along the margins of the slits and at the apex, 1-2 mm long. Capsule 4-5 × 2-3 mm.

DISTRIBUTION AND HABITAT : *O. trinervis* is restricted to a small area in the hills near Fort Dauphin in the far south-eastern part of Madagascar and from the western slopes of the mountains in the high part of the Manenanara river, tributary of the Mandrare. It has been collected up to 900 m in forest. Flowering specimens are known from January to February, July to August, and October.

NOTES : *O. trinervis* is very similar in habit to the sympatric *O. madagascariensis* subsp. *pubescens*. *O. trinervis* is distinguished, however, from all other taxa of the genus by its long narrow corolla tube which encloses the anthers. The anthers are also conspicuously papillate along the margins of the slits and at the apex. The papillate margins at the dorsal side of the anthers adhere to each other forming a cylinder around the style. Through this construction of the dorsal theca walls adhering to each other, the anthers, though being introrse, open outwards. This species is also distinguished by having very short filaments which are much shorter than the anthers. On the contrary, the other species have filaments more or less as long as to much longer than the anthers.

Fruiting specimens of *O. trinervis* are difficult to distinguish from *O. madagascariensis* subsp. *pubescens*. However, the petioles of *O. trinervis* of normal-sized leaves (2-2.5 cm long) are 3-4 mm long while in *O. madagascariensis* subsp. *pubescens* the leaves of the same size have petioles only ca. 2 mm long or shorter.

SPECIMENS EXAMINED : TULEAR : *Cloisel s.n.*, Fort-Dauphin (P) ; *Commerson s.n.*, Madagascar (P) ; *Croat 31784*, along road through mountain forest in Chaines Anosyennes from Fort-Dauphin to Ranomafana, 1-28 km from Route 10, 100-350 m, 1975 (P) ; *Debray 1729*, Station forestière de Mandena Fort-Dauphin, 1972 (P) ; *Decary 10043*, Fort-Dauphin, Pic St Louis, 3-400 m, 1932 (P) ; *10402*, Distr. Fort-Dauphin, Col de Tanatana, 1932 (K, P) ; *10420*, Distr. de Fort-Dauphin, Massif de Bezavona, 1932 (P) ; *Homolle 1743*, Madagascar (P) ; *Humbert 5838*, environs de Fort-Dauphin, forêt de Manantantely, 60-300 m, 1928 (P) ; *5961 bis*, environs de Fort-Dauphin, entre le Pic St Louis et la mer, 1-25 m, 1928 (P) ; *13889*, Bassin de réception de la Mananara, affluent du Mandrare, pentes occidentales des montagnes entre l'Andohahela et l'Elakelaka l'Aniampanga, rive g. de la riv. Akaramy, en amont de Mahamaro, 8-900 m, 1934 (P) ; *Leandri & Saboureau 4287*, haut bassin de la Mananara, R.N. 11, entre Imonty et le Col de Tsilotsilo, 400-1900, 1960 (P) ; *Scott Elliot 2604*, Fort-Dauphin (K, P) ; *s. coll., s.n.*, Fort-Dauphin, open meadows, sandy soil (BM).

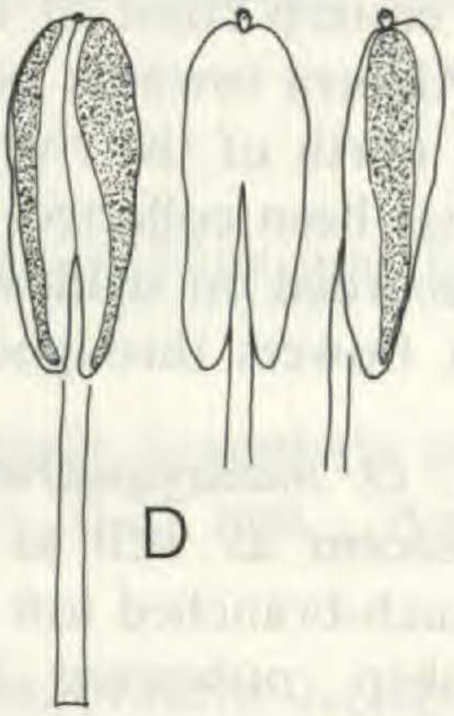
Ornichia madagascariensis (Baker) Klack., *comb. nov.* — Pl. 4 ; 5, *C*.

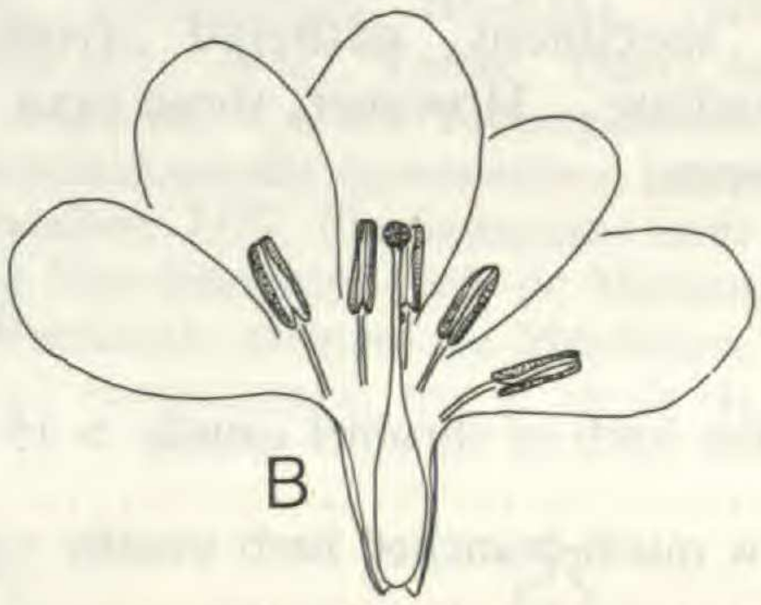
— *Chironia madagascariensis* BAKER, J. Linn. Soc., Bot. 18 : 273 (1881).

LECTOTYPE (here selected) : *Langley Kitching s.n.*, Madagascar, Coast to Capital (K ; iso-, P).

Erect herb or shrublet, up to 1 m high, with branches irregularly set along the stem or branched from the very base with long branches, erecto-patent to divaricate. Leaves elliptic to ovate to broadly ovate, 5-40 × 3-25 mm, acute to obtuse, 3-nerved, hairy. Calyx lobes 2.5-5 × 1-2 mm. Corolla : tube 4-5.5 mm long, about as long as or longer than the calyx, cylindrical below but ± vase-shaped above, violet to pale violet to blue ; lobes 5-7.5 × 2.5-5 mm. Anthers exserted, free, not prominently papillate along the margins of the slits or at the apex, (1-) 1.5-2.5 mm long. Capsule 4-6.5 × 2.5-4 mm.

NOMENCLATURAL NOTE : BAKER (1881 : 273) cited a specimen without number collected by KITCHING between Tamatave and Antananarivo. There is no specimen with such annotations in the herbaria examined. BAKER's types ought to be found at Kew. There is one specimen at Kew collected by KITCHING, between " coast to capital " which corresponds well to the protologue and is chosen as lectotype.





Pl. 4. — **Ornichia madagascariensis** : **A**, **A′**, habit × 0,5 (A, subsp. *madagascariensis* ; A′, subsp. *pubescens*) ; B-D, subsp. *pubescens* ; **B**, dissected flower with calyx removed × 3 ; **C**, flower in fruit with corolla removed × 3 ; **D**, anthers × 12. (A, *Bosser 16778*, P ; A′, *McWhriter 226*, P ; B-D, *Humbert & Cours 17634*, P).

DISTRIBUTION AND HABITAT : *O. madagascariensis* is distributed along a considerable part of the eastern coast of the island. It is known from Fort-Dauphin towards south to near Lake Alaotra towards north, with *O. madagascariensis* subsp. *madagascariensis* mostly near to and north of the river Mangoro and *O. madagascariensis* subsp. *pubescens* towards south. It has been collected mostly in forests. *O. madagascariensis* subsp. *madagascariensis* is also recorded on shadowy cliffs and near streams. It has been collected up to 1200 m altitude. It flowers throughout the year.

NOTES : *O. madagascariensis* subsp. *madagascariensis* differs from *O. madagascariensis* subsp. *pubescens* as well as from the other species of *Ornichia* by its low habit. It is usually a much-branched low shrublet with small elliptic leaves. The leaves of *O. madagascariensis* subsp. *pubescens* are usually larger and ovate. Furthermore, the anthers of *O. madagascariensis* subsp. *madagascariensis* are ca. 1.5 mm long or sometimes up to 2 mm, while those of *O. madagascariensis* subsp. *pubescens* measure ca. 2 mm or sometimes more. Although the differences usually are very noticeable they are not absolute and some specimens gathered from areas contiguous to the two subspecies are intermediate. However, these taxa are mostly allopatric ; they are, therefore, considered as subspecies.

KEY TO THE SUBSPECIES

1. Taller herb or shrublet usually > 15 cm high ; larger leaves > 1.5 cm long, usually 1.5-3 cm..... *O. madagascariensis* subsp. *pubescens*
1′. Low much-branched herb usually < 15 cm high ; leaves < 2.5 cm long, usually 1-1.5 cm..... *O. madagascariensis* subsp. *madagascariensis*

O. madagascariensis (Baker) Klack. subsp. **madagascariensis**.

Erect but low herb, 2-20 cm high, usually branched from the very base with long ± divaricate branches. Leaves ovate to broadly ovate to usually elliptic, 5-25 × 3-15 mm. Anthers (1-) 1.5-2 mm long.

SPECIMENS EXAMINED : TAMATAVE : *Baron 1572*, Central Madagascar (K) ; *Bosser 16778*, Périnet, Ambavaniasy, 1962 (P) ; *Botoalina 4474*, Distr. Tamatave, Canton Mangabe, R.N. 3, 1952 (P) ; *Cours 925*, Distr. Ambatondrazaka, Onibe, 800-1000 m, 1938 (P) ; *Decary 14193* (morphologically intermediate between the subsp.), *14261*, forêt orientale, vallée du Sakaleona, 1939 (P) ; *16528, 16733*, R.N. 3, Zahamena, 1941 (P) ; *17988*, forêt de l'Est, Fanovana, 1942 (P) ; *18370*, Sud de Moramanga, Anosibe, 1942 (P) ; *Dequaire 27845*, Sahamalaza (Samalahaza) (P) ; *Garnier 140*, entre Tamatave et Tananarive, 1869 (P) ; *Homolle 804*, Madagascar (P) ; *Humbert 1992*, Prov. d'Andovoranto, Distr. de Moramanga, forêt d'Analamazaotra, talus de la « route de la Reine » à 3 km au sud du village d'Analamazaotra, 900-950 m (P) ; *Humbert & Cours 17634*, Massif de l'Andrangovalo au SE du Lac Alaotra, R.N. 3 dite de Zahamena, bassin de l'Onibe, 800-1000 m, 1937 (P) ; *Keraudren 1766*, forêt d'Analamazaotra, près de Périnet (P) ; *Keraudren-Aymonin & Aymonin 25395, ibid.* (P) ; *Kitching s.n.*, Coast to Capital (K, P) ; *Perrier 9022*, forêt d'Analamzoatra, près de Périnet, 800 m (P) ; *16025, ibid.*, ca. 900 m (P) ; *12602*, Bassin du Manongotra, 400 m (P) ; *18263*, Bassin inf. du Mangoro, ca. 300 m (P) ; *Rakoto Jean de Dieu & Ramasokoto 1584*, Distr. Ambatondrazaka, Canton Manakambahiny Est, Sahamalaza, 1948 (P) ; *Rakotozafy 592*, P.K. 196, route de Tamatave, 1966 (P) ; *s. coll., s.n.*, Herb. du Petit-Thouars (P).

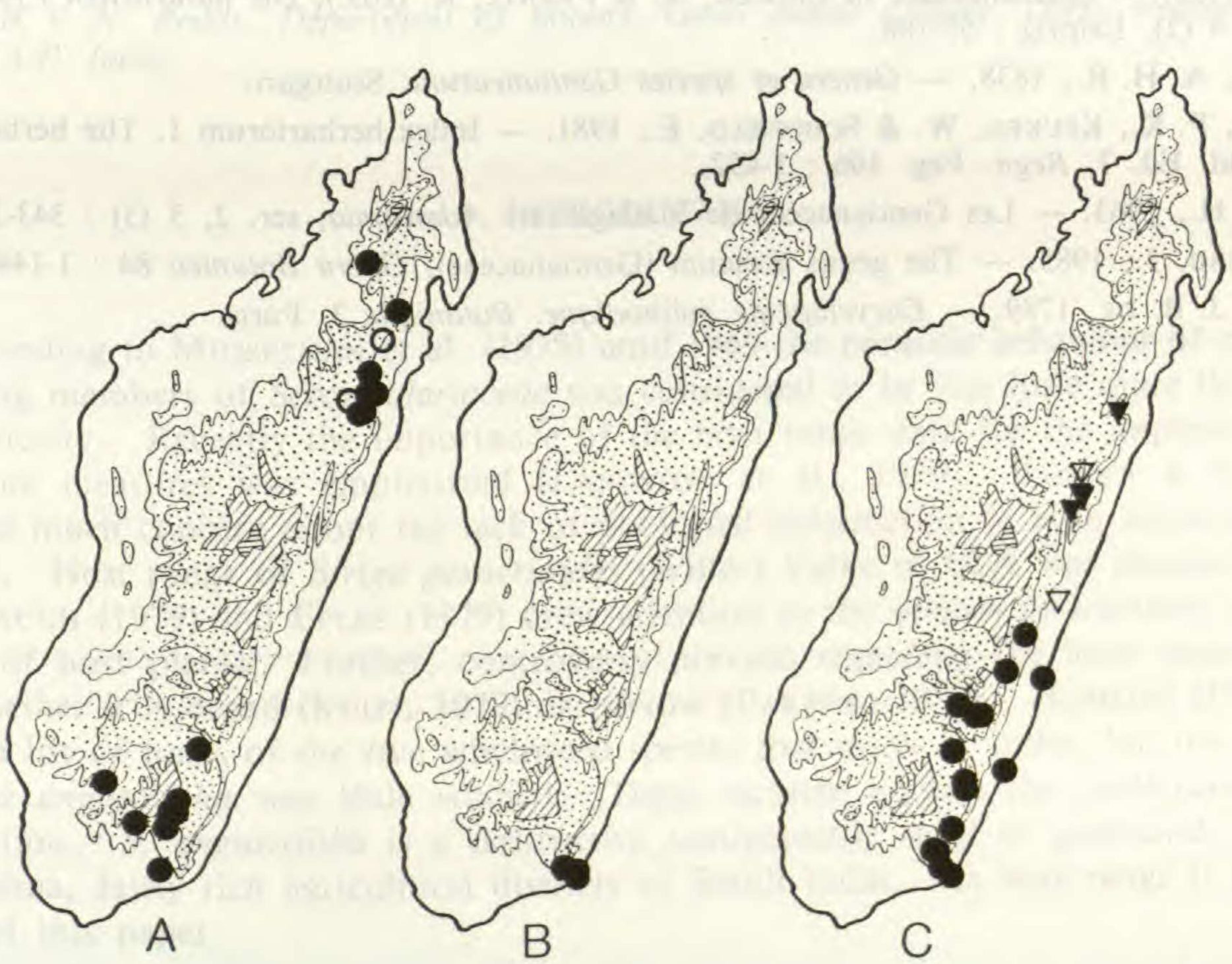
O. madagascariensis (Baker) Klack. subsp. **pubescens** (Baker) Klack., *comb. et stat. nov.*

— *Chironia pubescens* Baker, J. Bot. 20 : 172 (1882).

Lectotype (here selected) : *Baron 291*, Central Madagascar, edges of forest near Tanala, top of great ridge (K ; iso-, P).

Erect herb or shrublet, up to 1 m high, with branches usually irregularly set along the stem, erecto-patent. Leaves ovate to broadly ovate, 15-40 × 10-25 mm. Anthers (1.5-) 2-2.5 mm long.

Specimens examined : *d'Alleizette s.n.*, Fianarantsoa, forêt de Marovitsitra, Ivohibe, 16.11.1924 (P) ; *Armand s.n.*, Fianarantsoa, environs d'Ivohibe, ca. 1200 m, 1924 (P) ; *Baron 291*, Central Madagascar, near Tanala, top of great ridge (K, P) ; *Bosser 18606*, Fianarantsoa, Ihosy, route Ranotsara-Iakora, 1963 (P) ; *18919*, Fianarantsoa, route de Fort Carnot (Ikongo), 1964 (P) ; *Deans Cowan s.n.*, Tanala, 1880 (BM) ; *Decary 4777*, Fianarantsoa, Prov. Farafananga, Befotaka, 1926 (P) ; *4939*, Fianarantsoa, Prov. Farafananga, Midongy du Sud, 1926 (P) ; *10823*, Tulear, Distr. du Fort-Dauphin, Ivondro (Evondro), 1932 (P) ; *11022*, Tulear, Fort-Dauphin, Col du Tsitongabarika, 1932 (P, S) ; *13651*, Fianarantsoa, Ifanadiana, 1938 (P) ; *13724* (morphologically intermediate between the subsp.), Fianarantsoa, Mt Vatovavy, Mananjary, 1938 (P) ; *Humbert 3177*, Fianarantsoa, forêt à l'est d'Ivohibe, ca. 1000 m, 1924 (P) ; *5838 p.p.*, Tulear, environs de Fort-Dauphin, forêt de Manantantely, 60-300 m, 1928 (P) ; *13889*, Tulear, bassin de réception de la Mananara, affluent du Mandrare, pentes occidentales des montagnes entre l'Andohahela et l'Ekalelaka à l'Aniampanga, rive g. de la riv. Aka-



Pl. 5. — Know distribution of **Ornichia** : **A**, *O. lancifolia* (○ = approximate locality) ; **B**, *O. trinervis* ; **C**, *O. madagascariensis* (▼ = subsp. *madagascariensis*, ▽ = approximate locality ; ● = subsp. *pubescens*).

ramy, en amont de Mahamavo, 800-900 m, 1934 (P) ; *20361*, Tulear, forêt de Manantantely près Fort-Dauphin, 50-300 m, 1947 (P) ; *Lantz s.n.*, Fianarantsoa, Benanoremana, 1881 (P) ; *s.n.*, Fianarantsoa, Manakara, 40 m, 1881 (P) ; *s.n.*, Fianarantsoa, Zazafotsy (Zakafotzy), 1881 (P) ; *s.n.*, Manakana, 900-1000 m, 1881 (P) ; *s.n.*, Madagascar (P) ; *McWhirter 226*, Tulear, Col de Manangotry, 60 km NW of Fort-Dauphin, 300-630 m, 1968 (K, P) ; *Peltier 5530*, Tulear, Ankevohevo, Ranomafana, 1965 (P) ; *Razafindrakoto 3501*, Fianarantsoa, Canton Ivongo, Distr. Ivohibe, R.N. 5, 1951 (P) ; *11579 RN, ibid.*, 1961 (P) ; *Perrier 9068*, vallée du Iatrary, ca. 650 m, 1911 (P) ; *12602*, Bassin du Manampatrana, 400 m, 1919 (P).

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