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Review of *Noterapion* Kissinger from Chile and Argentina
(Coleoptera: Apionidae).

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The weevils are associated with the southern beech, *Nothofagus* Blume (in Nothofagaceae, see Manos, 1997), also known from the Australasian Region. *Noterapion meorrhynchum* develops in abandoned cynipid wasp leaf galls.

The combination of a plant host with biogeographic significance and the possession of very primitive characters suggests that *Noterapion* may represent an ancient lineage dating back to the time of the Cretaceous and the breakup of Gondwana.

Introduction

This paper summarizes the examination of approximately 2,300 specimens of *Noterapion* Kissinger (type species *Apion meorrhynchum* Philippi and Philippi), a genus recently proposed for several species of Chilean and Argentinean apionids (Kissinger, 2002). The family name Apionidae is used following Alain kissinger; *N. kuscheli* Kissinger, *N. nothofagi* Kissinger, and *N. saperion* Kissinger. A lectotype designation is published for *Apion meorrhynchum* Philippi and Philippi and *Apion vestitum* Philippi and Philippi. *Apion fluviatilis* Enderlein and *A. pingue* Béguiu-Billecocq are synonymized with *N. meorrhynchum* (Philippi and Philippi), new synonymy.

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angustatum Philippi and Philippi from the Collection Philippi in the Museo Nacional de Historia Natural, Santiago, Chile. He personally identified these specimens as type material during a recent trip to Santiago. None of the specimens had an original locality or identification label. He cleaned, remounted, and labeled the specimens (Kuschel *pers. comm.*). All will have a locality label with three lines: "Chile, Valdivia/ Fundo San Juan/ Coll. Philippi". Dimensions are listed for the specimen selected as lectotype: the length (taken from the middle of the eye to the end of the elytra) and the width (across the widest part of the elytra) (Kuschel *pers. comm.*). Because the number of syntype specimens is not given in the original description, a lectotype is picked for each species: lectotypes are labeled in red and paralectotypes in pale blue; each label will have four lines: Lectotype [symbol for male or female] / [original name] / RA & F Philippi / G Kuschel, 2002 (Kuschel in litt.).

A lectotype is designated in this paper (based on the research of Kuschel) for Apion meorrhynchum Philippi and Philippi and for Apion vestitum Philippi and Philippi to achieve taxonomic stability for these very similar species, otherwise, there is no labelled type material for them. This statement is intended to fulfill article 74.7.3 of the ICZN (4th ed.) requiring justification for such designations.

**Note about holotypes:** The holotypes for *N. chilense, N. kuscheli, N. nothofagi, and N. saperion* are to be returned to the NZAC. It is the author’s understanding that the holotypes (and other representative material) will be sent to MNNC for permanent storage (Kuschel, in litt.).

Each description begins with a section, “Distinctive characters”; characters mentioned there will not be repeated in the description unless more detail is furnished.

**Key to the species of Noterapion Kissinger occurring in South America**

1A. In dorsal view femur 1 sides at base evenly converge to attachment with trochanter; pseudotrochanter not distinct (Fig. 1); in profile male median lobe of aedeagus dorsal margin abruptly curved downward near orifice and apex recurved upward (Fig. 2); endophallus lacks globular sclerotized process near base of median lobe ............... 3

1B. In dorsal view femur 1 sides at base narrowed to short subparallel region with distinctive sculpture (pseudotrochanter) which attaches to trochanter (Fig. 3); in profile male median lobe of aedeagus nearly flat, (at most slightly, evenly curved) (Fig. 4); endophallus with distinct sclerotized process near base of median lobe (exact position depends on condition of endophallus) (Fig. 5) ........................................... 2

2A. In profile dorsal margin of head constricted behind eye, ventral surface of head broadly convex (Fig. 6); impressed area on pseudotrochanter comparatively shorter; male endophallus at base of median lobe of aedeagus with globular process somewhat wider than long, consisting of 2 halves separated variable distance (depending on condition of endophallus) (Fig. 7); female rostrum generally less than 1100μ long ........................................... Noterapion kuscheli Kissinger

2B. In profile dorsal margin of head not constricted behind eye, ventral surface of head flat (angular ridge may be present) (Fig. 9); impressed area on pseudotrochanter comparatively longer (Fig. 24 & 25); male endophallus near base of median lobe with single top-shaped globular sclerite usually longer than wide (Fig. 8); female rostrum generally more than 1100μ long .................. Noterapion meorrhynchum (Philippi and Philippi)

3A. Inner margin of tibia 3 relatively straight, not distinctly convex or bowed (Fig. 10); mesocoxae with flat union of mesosternal intercoxal and metasternal processes, in profile union on level with usual sternal surface; mesocoxae not dentate or angulate ........................................... 4

3B. Inner margin of tibia 3 distinctly convex, tibia appears bowed (Fig. 11); mesocoxae with mesosternal process long, nearly vertical, distinctly projecting away from usual sternal surface, it and metasternal coxal process meet as two upper right cylindrical objects nearly on level of apex of mesocoxae (Fig. 12A,B); mesocoxae (of both sexes) dentate or angulate on posterior medial aspect (Fig. 12C) ............................................................ Noterapion saperion Kissinger

4A. Total length from anterior margin of eye to tip of elytra less than 3250μ; in dorsal view sides of female rostrum more nearly parallel beyond insertion of antenna; scutellum variable ........... 5

4B. Total length greater than 3500μ; in dorsal view female rostrum strongly narrowed beyond insertion of antenna, strongly expanded toward apex (Fig. 13); scutellum narrow, elongate (Fig. 14) . Noterapion bruchi (Béguin-Billecocq)

5A. Elytral striae fine, elytra interval 2 at middle nearly flat, about twice as wide as stria (Fig. 15); pronotal punctures denser, deeper, interspaces narrower, scales tend to overlap (Fig. 16); scutellum short, rounded .................. 6
Figures 1-8. *Noterapión bruchi* (Bégún-Billecocq). 1) dorsal view of trochanter and femur 1 [no scale]; 2) lateral view of median lobe of aedeagus [110μ]. *N. meorrrhythnum* (Philippi and Philippi). 3) dorsal view of trochanter, femur 1 and pseudotrochanter [no scale]; 4) lateral view of median lobe of aedeagus [71μ]; 5) dorsal view of median lobe of aedeagus [110μ]; 6) female, lateral view of head and prothorax [967μ]; 7) detail of basal armature of endophallus, diagrammatic [27μ]. *N. huacheli* Kissinger. 8) detail of basal armature of endophallus, diagrammatic [54μ]. [Scale value].
5B. Elytral striae coarse, deep, elytra interval 2 at middle subconvex, about as wide as stria (Fig. 17); pronotal punctures sparse, shallow, inter-
spaces flat, wide, scales tend to be isolated (Fig. 18); scutellum tends to be narrow, elongate (Fig. 18) .................................. Noterapion chilense Kissinger.

6A. Rostrum in profile distinctly curved (Fig. 19), apical ventral margin of hypostomal area not prominent (Fig. 20); antennomere 1 generally > 1.2 as long as eye; ventral sublateral sulcus generally present (Kissinger, 1992, Fig. 2,3) ...................... ... Noterapion philippianum (Alonso-Zarazaga)

6B. Rostrum in profile straight (Fig. 22), apical ventral margin of hypostomal area produced into angular or acute projection (Fig. 21); antennomere 1 frequently < 1.12 as long as eye; ventral subla-
teral sulcus generally absent .................................. Noterapion nothofagi Kissinger

Noterapion meorrhynchum (Philippi and Philippi) Figs. 3-5, 8-10, 23-26

Apion meorrhynchum Philippi and Philippi, 1864: 364. TYPE MATERIAL: 1 syntype, in Collection Philippi (MNHC), no original labels, LECTOTYPE (here de-
signed, original number of syntypes not specified in original description; labeled by G. Kuschel, who gives dimensions of specimen as 3.00mm long x 1.45mm wide (Kuschel, pers. comm.), symbol for male, [white locality label] "Chile, Valdivia / Fundo San Juan / Coll. Philippi"; [red lectotype label with 4 lines] "Lectotype, symbol for male / Apion meorrhynchum / RA & F Philippi / G Kuschel, 2002" [The locality is not certain based on the original description; the species recently was collected from Valdivia].


Apion pingue Béguin-Billecocq, 1909: 461. TYPE LOCALITY: République de Argentine: Gobierno del Rio Negro (MNHC); syntype female, labeled "R. Argen-

Apion fuegianum Enderlein 1912: 16. TYPE MATERIAL: HOLOTYPE: male, [Argentina: Tierra del Fuego Ad-
ministrative Division;] Lapataia in Feuerland. Not examined. New Synonymy.

Noterapion meorrhynchum (Philippi and Philippi), Kissinger, 2002: 315.

Noterapion pingue (Béguin-Billecocq), Kissinger, 2002: 315.

Noterapion fuegianum (Enderlein), Kissinger, 2002: 315.

Distinctive characters. Length less than 3.50mm; pronotum with denser, deeper punctures (Fig. 16). Femur 1 of both sexes with distinct pseudotrochanter
(Fig. 3, 24, 25). In profile rostrum distinctly curved (Fig. 9); lacks hypostomal prominence (Fig. 20); in dorsal view female rostrum largely subparallel throughout; female rostrum > 1.6 length of prothorax; dorsal margin of head not constricted behind eyes; ventral surface of head flat, possibly with angular transverse ridge (Fig. 9). Scutellum short, broad. Tibia 3 straight (Fig. 10). Sternal processes separating mesocoxae not prominent; mesocoxa not dentate. Dorsal margin of median lobe of aedeagus in profile slightly, evenly curved from base to apex (Fig. 4); endophallus at base of median lobe with single top-
shaped globular sclerite usually longer than wide (Fig. 5, 8).

Description. General aspect black, tarsi and anten-
na dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 2360-3530μ; width 1100-1700μ. Rostrum of male 820-1230μ long; 1.24-1.94 as long as prothorax; in basal 0.5 surface more strongly alutaceous, bearing punctures 18-36μ in diameter with very fine seta-like scales 36-64μ long, laterally with punctures arranged in 3 indistinct, irregular, shallow sulci, which end before insertion of antenna, in apical 0.5 surface very finely alutaceous with punctures finer, sparser and with suberect setae 12-20μ long, ventral sublateral sulcus (VSLS) indicated by row of 11-13 slightly impressed, coarser punctures bearing erect setae 27-64μ long, at apex of VSLS and ventrally near antenna insertion with individual setae up to 100μ long; in profile slightly curved, sides largely subparallel throughout, slightly stouter behind antennal insertion; in dorsal view slightly expanded at antennal insertion, sub-
equal to base, in apical 0.3 sides subparallel, indistinctly expanded toward apex; male antenna inserted at basal 0.48-0.56 of rostrum at distance in front of eye 2.48-3.46 width of frons; dorsal margin of scrobe nearly straight, ending near anterior margin of eye, subccephalic ridges lacking. Rostrum of female 1100-1790μ long; 1.67-2.58 as long as prothorax; sculpture much as male, more polished near tip; sparse vesti-
ture throughout as in male apical 0.5, VSLS similar to male without long seta near antennal insertion; in profile (Fig. 9) slightly curved, sides subparallel throughout; in dorsal view largely subparallel through-
out, slightly broader at insertion of antennae and at apex; female antenna inserted at basal 0.44-0.52 of rostrum at distance in front of eye 2.99-4.42 width of frons. Head with frons 140-220μ wide; 0.81-1.09 as
Figures 9-14. *Noterapiot meorrhynchum* (Philippi and Philippi). 9) female, lateral view of head and prothorax [170μ]; 10) male, lateral view tibia 3 [190μ]. *N. superio* Kissinger. 11) male, lateral view tibia 3 [190μ]; 12A) detail area indicated for B and C [370μ]; 12B) detail of area between mesocoxae, 1 is mesosternal intercoxal process, 2 is same for metasternum, 3 is coxal process; 12C) detail of profile of mesocoxa with angular process. *N. bruchi* (Béguin-Billecocq). 13) female, dorsal view of head and rostrum [367μ]; 14) detail of scutellum [190μ]. [Scale value].
wide as dorsal tip of rostrum; head surrounding eye with moderately dense scales 55-83 x 6-9µ, scales slightly longer and coarser in male, in profile frons adjacent to upper quadrant of posterior margin of eye with 3-4 erect setae 55-64µ serially arranged, frons flat, median area glabrous, laterally with 2-3 irregular rows of punctures with scales as described above; in profile dorsal and ventral margin of head flat, ventrally transverse angular ridge may be present. Prothorax 460-740µ long, at base 1.04-1.56 as wide as long; basal margin moderately expanded laterally, sides slightly diverging toward middle, there distinctly narrower than base, constricted apically; punctures 18-36µ in diameter, shallow, bearing acute, decumbent scales similar to those on basal lateral part of head; interspaces narrow, finely alutaceous; basal fovea lacking, may be indicated as basal median with moderately dense scales 55-83 x 6-9µ, scales slightly longer and coarser in male; in profile area with distinct impression 90-185µ long; interval 2 at middle of elytra 1.4-1.7X stria, somewhat convex, with 4-5 rows of fine punctures bearing scales similar to pronotum; intervals with long (>60µ), erect specialized setae scattered along length as follows: intervals 1, 3 and 5 with 4-7+ setae, interval 7 with 1-4 setae, interval 9 with 1 seta near apex; striae moderately fine, deep, with scales somewhat longer than adjacent interval, on apex striae join 1+2+9, 3+4, 5+6, 7+8. Femur 1 (Fig. 3) with basal pseudotrochanter 150-220µ long (measured along dorsal margin); area with fine, dense microsculpture similar to coxa and trochanter and not relatively smooth as surface of remainder of femur; in profile area with distinct impression 90-185µ in length oriented parallel with dorsal margin of femur, located about 0.3 width of femur down from dorsal margin; in profile dorsal margin of pseudotrochanter somewhat arcuate with respect to remainder of femur; in dorsal view sides of pseudotrochanter subparallel, somewhat disjoint from outline of remainder of femur. Male characters: Tibia 2 with simple macro 46-64µ long; Tibia 3 with simple macro 46-74µ long. Median lobe of aedeagus 655-848µ long (excluding posterior apophyses), strongly depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophyses is 3.6-3.8, in dorsal view (Fig. 5) sides subparallel from base to near orifice, evenly narrowing to 51-90µ wide tip, tip simple, in lateral view (Fig. 4) sides subparallel from base to near orifice, slightly, evenly curved from base to 12-25µ wide tip; posterior apophyses broad, 0.58-0.71 as long as body of median lobe; endophallus with top-like globular structure (Fig. 8) at base of median lobe 86-145µ long X 86-100µ wide, near orifice with 2 hook-like frena 86-110µ long X 54-67µ wide. Basal piece of tegmental apodeme articulates with postfenestral plate; parameres fenestrae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing 4-6 macrochaetae 30-68µ long; basal median area of parameres flat.

Biology. Collected on Nothofagus antarctica (G. Forst.) Oerst., N. betuloides (Mirbel) Blume, N. dombeyi (Mirbel) Blume, N. pumilio (Prepp. & Endl.) Krasser and N. obliqua (Mirbel) Blume based on label data and G. Kuschel (in litt.). The following is based largely on information from Kuschel (in litt.): Notapion meorrhynchum oviposites in freshly abandoned leaf galls of a cynipid wasp (Paraulax sp.) on Nothofagus dombeyi where development occurs through pupal and adult stages. These galls (Fig. 23, photograph provided by G. Kuschel) are smooth, spherical, 10-15 mm in diameter, on 1-2 mm long stalks attached to 1-2 mm thick short twigs of last years growth. One gall may produce up to 12 weevils. (The galls often are thought, erroneously, to be the fruit of Nothofagus dombeyi.)

There may be a question about the gall inducer. De Santis et al. (1993) illustrated a gall from N. dombeyi much like Fig. 23 associated by him with parasitoids of the genus Paraulax (Cynipinae) and three other wasp families Pteromalidae, Eulophidae, and Torymidae. I agree with Kuschel that it is questionable that all these unrelated wasps could produce the same kind of gall and that, in fact, the three families may be parasitoids of Paraulax and not gall inducers (Kuschel in litt.). De Santis et al. (1993) also recorded undetermined Curculionidae obtained from galls of Nothofagus antarctica, but a recent attempt by G. Kuschel failed to locate this material in Argentina (Kuschel in litt.).

Stuardo (1929) reported that Apion tenebricosum Gemminger emerged from fruit of N. antarctica; the authority for the determination was not given; this material was not found in the collection of the Colegio San Pedro Nolasco, Santiago, Chile (Kuschel pers. comm.). Apionid material reared from the fruit of N. antarctica remains unlocated.

Hustache (1930) states that D.S. Bullock reared Apion obscurum Blanchard from galls on N. dombeyi; his illustration of the gall is much like Fig. 23. Kuschel has 1 specimen of the Bullock material; it is N. meorrhynchum labeled [Chile, Angol, 10.XI.1933
Figures 15-21. *Noterapion philippionum* (Alonso-Zarazaga). 15) dorsal view of head, pronotum and elytra [150μ]; 16) detail of pronotum and scutellum [60μ]; 19) female, lateral view of head and rostrum [190μ]; 20) detail of lateral view of rostrum hypostomal area [190μ]. *N. chilense* Kissinger. 17) dorsal view of head, pronotum and elytra [240μ]; 18) detail of pronotum and scutellum [94μ]. *N. nothofagi* Kissinger. 21) detail of lateral view of rostrum hypostomal area [190μ]. [Scale value].
Notes on synonymy. My interpretation of *N. fuegianum* (Enderlein) is based on a female from Chile, Magallanes: Rio Seco (BMNH), author of determination not stated, and a series from Chile, Magallanes, Puerto Williams, determined by Kuschel (NZAC). The type locality of *N. fuegianum* is 62 km west of Puerto Williams, across the Beagle Channel. Its synonymy with *N. meorrhynchum* (Philippi and Philipp) is based on a sample of 49 male and 41 female of *N. meorrhynchum* from northern Chile and 24 male and 24 female of *N. fuegianum* (Enderlein) from Magallanes. No significant differences within sex for the two populations were found for the following measurement characteristics: total length; length of rostrum; position of insertion of antenna on rostrum; length and width of femur 1; length of prothorax and of elytra; width of prothorax at base, middle and apex; width of elytra and of humeris; and width of frons. Also, the bionomics, the pseudotrochanter at the base of femur 1 in both sexes, the shape and structure of the median lobe of the aedeagus, and the armature of the endophallus are similar in the two forms.

A statistically significant difference was found in the greater thickness of the rostrum of both sexes of *N. fuegianum* compared to *N. meorrhynchum*. To illustrate using the width of the female rostrum of this specimen is above the upper limit for *kuscheli* and *philippianum* as given above.

Note on structure of endophallus: A male from Valdivia (DGKC) has the endophallus everted through the orifice of the median lobe and projecting beyond the tips of the elytra (Fig. 26). The entire ejaculatory duct is not clear in this preparation, making interpretation uncertain. The basal toplike globular sclerite is situated at the end of the apparent ejaculatory duct and its narrow, short, corkscrew portion is associated with the end of the everted endophallus as if it was the gonopore. It is not certain whether this sclerite has an internal duct or is grooved along the venter (the figure is diagrammatic). There are 2 interpretations (at least) of Fig. 26. 1) The ejaculatory duct joins a longitudinal cleft on the globular sclerite and the edges of the cleft are visible and end as a circular object at the base of the “cork-screw”. 2) The ejaculatory duct joins a longitudinal canal in the globular sclerite, which ends as above near the base of the “cork-screw”. It is reasonably clear that the duct does not go out into the corkscrew structure (but it might still serve as a guide for the spermatozoa).

Two species, *N. meorrhynchum* and *N. kuscheli*, have a distinct basal globular process in the endophallus (Fig. 7-8). It is possible that this is a remnant of...
the endophallic flagellum found in more basal members of Apionidae. At the other extreme are highly derived species of Apioninae that lack obvious sclerotized elements in the endophallus. In *kuscheli* the process consists of 2 halves which become widely separated upon eversion of the endophallus as was seen in a partial eversion (NZAC).

Further, in *kuscheli* there is a basal median clear area adjacent to the sclerites in the base of the endophallus of about the same diameter as the single sclerite in *meorrhynchum* (Fig. 7); it is possible that this "clear area" contains the membranous equivalent of the gonopore as described for *meorrhynchum*; Fig. 7 is diagrammatic. At present the most that can be said is that *meorrhynchum* and *kuscheli* have at least one undisputed sclerotized element in the endophallus.
at the base of the median lobe not found elsewhere in New World Apioninae; the lack of a good preparation of the ejaculatory duct clouds the hypothetical relationship of this sclerite with a flagellum.

**Distribution.** The range is between latitude 34°58' S and 54°55' S in the Maule, Biobío, Araucania, Los Lagos, Aisén, and Magallanes Regiones of Chile and the Río Negro, Santa Cruz, and Neuquén provinces and Tierra del Fuego administrative division of Argentina. **Argentina:** [Neuquén]: 4 males, 4 females, Neuquén, 17.I.1949, A. Willink (NZAC); **Río Negro:** 1F, P. Best, 26.XI.1950, W. Wittmer (NZAC); male, L. Trébol, 8.II.1949, W. Wittmer (NZAC). **Santa Cruz:** 3 males, female, L. Viedma, 23.II.1947, W. Wittmer (NZAC); male, Brazo Onelli (Lago Argentino), 28.II.1953, A. Willink (NZAC). **Chile:** [Unspecified Región]: male, 2 females, Chili, Collection through Buchanan, det Wagner (USNM). **Maule:** 10 males, 10 females, Cord. Curicó, Cubillón, 22-27.IX.1959 (NZAC); 1 females, Curicó, Cubillo, 25.IX.1959, L. E. Peña (NZAC); 12 males, 9 females, Curicó, El Coigual, III.1955 or I.1964, L. E. Peña (USNM, DGKC); male, Cord. Curicó, El Coigo, XI.-XII.1957 (NZAC); 56 males 1 female, Cord. Talca, Alto de Vilches, 18-25.X.1964, [L. E. Peña] (USNM, DGKC); 2 males, 3 females, Estero Leiva, Parral, 10.I.1953, L. E. Peña (NZAC); 1 male, Cord. Parral, Fundo Malcho, XI.1990 (NZAC).

**Biobío:** 5 males, 1 females, Nuble, Cord. Chillán, 20.XII.1954, L. E. Peña, 1100-1480 m (NZAC); 1 female, Chillán, Atacalco, 18.XII.1959, L. E. Peña (NZAC); 4 males, 1 female, Cord. Chillán, Las Cabras, 8-15.II.1959 (NZAC); 60 males, 57 females, 71 males, 1 female Cord. Chillán, Nuble, Las Cabras "Anfite en Chillán, S. foot-hill of Chillán Vulcano", 6.I.1963 [L. E. Peña] (USNM, DGKC); 1 male, 3 females, Cord. Chillán, Las Trancas, 10-18.II.1959 (NZAC); 5 males, 4 females, Cord. Chillán, Las Trancas, 21-30.XI.1964 or 1-11.XI.1964 [L. E. Peña] (USNM); 1 female, Fátima, Yungay, 23.II.1960, L. Schmidt, 1300 m (NZAC); 1 male, 1 female, Recinto, XI.1948 or XI.1951, L. E. Peña (NZAC); Los Ñires, 12.II.1994, T. Cekalovic (DGKC); 1 female, 10 km W Recinto, 17.II.1976, Gurney & Barria (USNM); Rio Renegado, 19.IX.1986, T. Cekalovic (DGKC); 1 male, 1 female, Laguna Laja, Los Barros, 15.II.1948, on Nothofagus antarctica, 1500 m (NZAC); Laguna Verde, 1 male, 27.I.1948, 1500 m (NZAC); 1 male, 3 females, Copahue, 21.II.1948, G. Kuschel, on Nothofagus pumilio, 1800 m (NZAC); 1 female, Lag Traapatara, 19.I.I.1948, on Nothofagus antarctica, 1700 m (NZAC); 1 male, 1 female, Pemehue, 17.I.1946, G. Kuschel, 1700 m (NZAC); 9 males, 2 females, Cord. Nahuelbuta, Pichinahue, 1-31.I.1959 (NZAC). **Araucania:** 2 females, Malbeco, Estero Cabrera, 11.I.1958 (NZAC); 2 males, 3 females, Victoria, 1.II.1929, galls of Coiguis, D. S. Bullock [specimens teneral] (USNM); 2 males, Victoria, 25.II.1929, galls of Coiguis, [specimens teneral; part of D. S. Bullock material], Collin E C Zimmerman 1941, determined as "Apion obscurum Wenck" (USNM); 6 males, 10 females, Cautín, Nueva Imperial, Chacamo, 17-23.II.1981, L. E. Peña, 600-700 m (USNM, DGKC); 1 females, Nueva Imperial, Fdo Los Selvas, W Temuco, 18.II.1981, L. E. Peña, 600-700 m (USNM); 1 male, 2 females, Termas de Toltuacu, 15-25.I.1959 (NZAC); 3 males, La Fusta, 9.XII.1959, 800 m (NZAC); 2 males, Termas Rio Blanco, 23.XI.1979, A. Ashworth, J. W. Hoganson, On Nothofagus, 1100 m, Valdivian Rain Forest (USNM); 1 male, P. N. Conguillío, 12.XII.1990, G. Kuschel, Nothofagus pumilio, 1000 m (NZAC); 1 female, Volcán Llaima, 17.IX.1951, M. Codoceo (NZAC); 3 males, 30 km NE Villarica, L. E. Peña (USNM). **Los Lagos:** 1 female, Valdivia, 13.II.1952, T. Corda (NZAC); 2 females, Valdivia, Valdivia, 23.X.1982, E. Kramer (DGKC); 1 female, Valdivia, Llanacura, 6.I.1957, en agallas de Nothofagus dombeyi (NZAC); 2 females, Valdivia, Panguipulli, 9.II.1983, E. Kramer (DGKC); 1 male, 2 females, Valdivia, Santo Domingo, 5.X.1975, E. Kramer (DGKC); 8 males, 20 females, Valdivia, Santo Domingo, 25.II.1976, T. Cekalovic (DGKC); 7 males, 8 females, Valdivia, Valdivia, 19.12.1981, E. Kramer (DGKC); 1 male, 1 female, Osorno, Salto del Pilmaiquén, 27.I.1951, R. M. (NZAC); 1 male, Osorno, 10 km E Puyehue, 24.I.1951 (NZAC); 1 male, 2 females, Osorno, Antillanca Airfield, Site 33A, PN de Puyehue, 22.I.1979, A. C. Ashworth, J. W. Hoganson, On Chusquea sp, 1970 m, subantarctic forest (USNM); 1 female, Llanquihue, Frutillar, 14.XII.1953, G. Kuschel (NZAC); 3 males, 2 females, Lago Llanquihue, Puerto Octay, 16.XI.1955, Oerhens leg., s/Nothofagus dombeyi (NZAC); 8 mi W Puerto Varas, 16.I.1951, R. M. (NZAC); Silla del Diablo, 15.II.1990, T. Cekalovic (DGKC); 2 males, 3 females, Los Muermos, 19.I.1951, R. M., forest (NZAC); 1 female, Chiloé, Rio Dongo, 19.I.2000, T. Cekalovic (DGKC); 1 female, Chiloé, San Juan de Chulado, 18.II.1998, T. Cekalovic (DGKC); 5 males, 3 females, Chiloé, 5 km S Compu, 10.II.1999, T. Cekalovic (DGKC). **Aisén:** 1 male, 1 female, Coihaique (or Coyhaique), 8.II.1956, s/Nothofagus pumilio or none (NZAC); 2 males, 2 females, Lago B. Aires, Puerto Cristal, 21-23.II.1956, s/Nothofagus pumilio or Nothofagus dombeyi or none (NZAC). **Magallanes:** 1 male, Estero White, Wellington, 49 59.5', 23.XII.1956, on Nothofagus betuloides (NZAC); 2 females, Ba. Muñoz Game, 27.XII.1958, s/Nothofagus betuloides (NZAC); Chorillos de los Alumbreros, 22.II.1971, T. Cekalovic (DGKC); 1 male, Lag. Amarga, Cabo Paine, 12.II.1959, s/Nothofagus antarctica (NZAC); 1 male, Los Robles, 21.I.1961, T. Cekalovic, #9, 62-32917 (USNM); 5 males, 4 females, Los Robles, Lafuén, 10.X.1961, T. Cekalovic (USNM); 2 females, P. Edén, 5.XII.1958, G. Kuschel (NZAC); 3 males, 1 female, Punta Arenas, I.1963, T. Cekalovic, reared from galls of Nothofagus antarctica (USNM); 8 male, 4 females, Punta Arenas, 22.II.1962, T. Cekalovic (USNM); 1 male, 2 females, Punta Arenas, 12.II.1963, T. Cekalovic (DGKC); 1 male, 1 female, Río Chubuteco, 2.II.1990, T. Cekalovic, ex Nothofagus antarctica (DGKC); 1 female, Última Esperanza, pen. Vargas, 5.II.1951, s/Nothofagus antarctica (NZAC); 7 males, 7 females, Puerto Williams, Is. Navarino, 3.II.1959 or...
17.I.1959, s/Nothofagus antarctica or s/Nothofagus pu- milio or none, some G. Kuschel (NZAC).

**Noterapion kuscheli** Kissinger

**new species**

*Figs. 6, 7*

**Distinctive characters.** Length less than 3.40mm; pronotum with denser, deeper punctures (Fig. 16). Femur 1 of both sexes with distinct pseudotrochanter (see Fig. 3). In profile dorsal margin of head constricted behind eyes; ventral surface of head broadly convex from base of head to base of rostrum (Fig. 6); rostrum curved (Fig. 6). Rostrum lacks hypostomal prominence (Fig. 20); rostrum of female < 1.6 length of prothorax. Scutellum short, broad. Tibia 3 straight (Fig. 10). Ectal processes separating mesoxae not prominent; mesoxoa not dentate. Dorsal margin of median lobe of aedeagus in profile slightly, evenly curved from base to apex (see Fig. 4); endophallus with globular process somewhat wider than long, consisting of 2 halves separated variable distance upon eversion of endophallus (Fig. 7).

**Description.** General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 2470-3343μm; width 1114-1627μm. Rostrum of male 822-1151μm long; 1.33-1.64 as long as prothorax; finely alutaceous throughout; in profile distinctly, evenly curved, sides subparallel throughout, in basal 0.5 surface smoother, punctures deeper, denser, elongate, 18-37μ long, arranged in indistinct rows, with very fine, decumbent seta-like scales 18-37μ long, in apical 0.5 punctures well separated, shallow, 18-28μ long, with very fine, short, erect setae, ventral sublateral sulcus (VSLS) shallow with 7-8 shallow punctures, bearing short setae (<37μ), apical seta of VSLS 70-80μ long, in larger, deeper puncture; in dorsal view sides somewhat abruptly converging at base, subparallel in basal 0.5, converging somewhat beyond insertion of antenna, distinctly diverging at apex; male antenna inserted at basal 0.49-0.52 of rostrum at distance in front of eye 2.66-3.62 width of frons; dorsal margin of scrobe nearly straight, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female (Fig. 6) 950-1225μm long; 1.40-1.66 as long as prothorax; similar to male; female antenna inserted at basal 0.43-0.50 of rostrum at distance in front of eye 2.88-3.10 width of frons. Head with frons 145-192μ wide; 0.80-1.18 as wide as dorsal tip of rostrum; in profile dorsal margin of head scales distinctly coarser and longer than those on basal 0.5 of rostrum, 46-83μ long; in profile dorsal margin of head slightly constricted above basal margin of eye, with 2 specialized erect setae 40-50μ long above dorsal-basal quadrant of eye; ventral margin of head broadly, evenly convex. Prothorax 512-555μ long, at base 0.93-1.23 as wide as long; basal margin moderately expanded laterally, sides slightly divergent toward middle, middle narrower than base, constricted apically; punctures moderately deep, 18-36μ in diameter, bearing acute, decumbent scales similar to those on basal lateral part of head; interspaces narrow, finely alutaceous; basal fossa shallow, elongate. Elytra at humeri 1.29-1.49 as wide as pronotum base; 2.52-3.21 as long as prothorax; 1.23-1.60 as long as wide; interval 2 at middle of elytra 1.4-1.6 X stria, somewhat convex, with 4-5 rows of scales similar to pronotum; intervals with long (>50μ), erect specialized setae as follows: 1 and 3 with >2, 5 with 2-3, and 7 and 9 with 1 near apex; striae moderately fine, deep, with scales similar to adjacent interval, on apex striae join 1+2+9, 3+4, 5+6, 7+8. Femur 1 with short pseudotrochanter with lateral impression as deep puncture 25-40μ wide. male characters: Tibia 2 with simple mucro 46-64μ long; tibia 3 with simple mucro 46-74μ long. Median lobe of aedeagus 473-728μ long (excluding posterior apophyses), strongly depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophyses is 2.9-4.2; in dorsal view sides subparallel from base to near orifice, evenly narrowing to 49-66μ wide tip, tip simple; in lateral view sides subparallel from base to near orifice, slightly, evenly curved from base to 12-27μ wide tip; posterior apophyses broad, 0.84-1.03 as long as body of median lobe; at base of median lobe endophallus with globular process (Fig. 7) somewhat wider than long, 110-176μ long X 98-137μ wide, consisting of 2 halves separated variable distance (process can be everted out of median lobe and halves are then widely separated), near orifice with 2 hook-like frena 77-122μ long X 42-66μ wide. Basal piece of terminal apodeme articulates with postfenestrual plate; parameres fenestrae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing macrochaetae; basal median area of parameres flat.

**Biology.** Collected on Nothofagus dombeyi (Mirbel) Blume and N. pumilio (Prepp. & Endl.) Krasser (G. Kuschel, in litt.).

**Distribution:** The range is between latitude 34° 58' S and 46° 40' S in the Maule, Biobío, Araucanía, Los Lagos and Aisén regiones of Chile and the "Argentin-
ian side of the Andes”. Data from Aisén (Lago General Carrera (formerly Lago Buenos Aires) and Argentina from Kuschel (in litt.).

verse ridge. Scutellum short, broad (Fig. 16). Tibia 3 straight (Fig. 10). Sternal processes separating mesocoxae not prominent; mesocoxa not dentate. In lateral view dorsal margin of median lobe of aedeagus abruptly curved ventrally, tip somewhat curved dorsally (Fig. 2); endophallus lacks structure at base of median lobe.

Description. General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 1481-3192 μ; width 548-1516 μ. Rostrum of male 419-1096 μ long; 1.04-1.76 as long as prothorax; in profile moderately stout, curved, sides slightly convergent from base to apex, in basal 0.5 punctures sparse, shallow, 19-37 μ in diameter, variably confluent, with fine scales 27-55 μ long, in apical 0.5 punctures tend to be elongate, bearing (<18 μ) suberect setae, ventral sublateral sulcus (VSLS) varies from absent (in small individuals) to distinct, with punctures bearing erect setae 35-83 μ long, longest at apex and near insertion of antenna; in dorsal view sides slightly convergent at base, subparallel in basal 0.5, slightly convergent beyond insertion of antenna, slightly divergent at apex; male antenna inserted at basal 0.41-0.52 of rostrum at distance in front of eye 1.84-3.33 width of frons; dorsal margin of scrobe nearly straight, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female 402-1096 μ long; 1.10-1.68 as long as prothorax; vestiture and sculpture as in male except basal scales shorter, setae of VSLS more uniform in length; female antenna inserted at basal 0.39-0.49 of rostrum at distance in front of eye 1.76-3.25 width of frons; dorsal margin of scrobe as male. Head with frons 73-202 μ wide; 0.73-1.17 as wide as dorsal tip of rostrum, flat; scales on head distinctly coarser and longer than those on basal 0.5 of rostrum, 46-740 μ long, scales of male somewhat coarser, in dorsal view narrow area at base of rostrum and anterior margin of eye with fringe of scales as on frons; in profile head broadly cone-shaped, widest at base, dorsal margin slightly ascending above basal margin of eye, with 2-3 specialized erect setae 35-60 μ long above dorsal-basal quadrant of eye; ventral surface of head varies from flat to slightly convex, obscured by vestiture. Prothorax 329-759 μ long, at base 0.97-1.34 as wide as long; basal margin strongly, acutely expanded laterally, sides subparallel to middle, middle narrower than base, rounded to slight apical constriction; pronotum with shallow punctures 18-37 μ wide bearing scales 46-83 μ long, interspaces flat, narrow, finely alutaceous; in profile dorsal margin slightly, evenly convex, laterally punctures and scales similar to disk of pronotum; basal fovea variable. Scutellum short, broad. Elytra at humeri 1.10-1.69 as wide as pronotum base; 2.54-3.82 as long as prothorax; 1.23-1.73 as long as wide; interval 2 at middle of elytra 1.9-2.1 X stria, slightly convex, with 2-4 rows of scales similar to pronotum; intervals with long (>50 μ), erect specialized setae scattered along length as follows: 1 with 4-10, 3 with 2-5, 5 with 1-5, 7 with 1-4, and 9 with 1 near apex; striae fine, deep, with scales slightly longer than adjacent interval, on apex striae join 1+2+9, 3+4, 5+6, 7+8. Male characters: Tibia 2 with simple mucro 30-60 μ long; tibia 3 with simple mucro 35-75 μ long. Median lobe of aedeagus 419-783 μ long (excluding posterior apophyses), strongly depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophyses is 2.8-4.4; in dorsal view sides subparallel from base to orifice, evenly narrowing to 49-98 μ wide, tip simple; in lateral view sides subparallel from base to near orifice, slightly, evenly curved from base to orifice, dorsal margin abruptly curved ventrally, tip 10-17 μ wide, somewhat curved dorsally; posterior apophyses broad, 0.52-0.77 as long as body of median lobe; endophallus lacks structure at base of median lobe, near orifice with 2 hook-like frena 49-78 μ long X 27-61 μ wide. Basal piece of tegmental apodeme articulates with postfemoral plate; parameres fenestrae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing macrochaetae; basal median area of parameres flat.

Biology. Collected on Nothofagus antarctica (G. Forst.) Oerst., N. betuloides (Mirbel) Blume, N. dombeyi (Mirbel) Blume, N. nitida (Phil.) Krasser, and N. obliqua (Mirbel) Blume based on label data and G. Kuschel (in litt.).

Comment on size range: There is no good explanation for the multimodal distribution of size in this species. Present data seem to indicate that the populations of small and large individuals belong to the same species. Precise biological studies may prove otherwise. (For the species N. chilense Kissinger, G. Kuschel (in litt.) found a sample of 30 individuals that were small ("tiny") compared to the usual size of the species. N. nothofagi Kissinger also has a wide size range, 1.9 - 3.1 mm, but the swarm of small individuals is not as marked).

For N. philippianum, museum specimens indicate that minute individuals may occur as local swarms (the local collection may be 100+) and these are sympatric with less abundant larger individuals.
Argentina: Rio Negro: Ashworth, mixed Nothofagus forest, on Escallonia along Wittmer, 1600 m (NZAC); 1 male, 25 females, lake shore (NZAC).

Andes in Chillín, S. foot-hill of P.N. Los Glaciares 50°


Distribution. The range is between latitude 34° 58' S and 54° 55' S in the Maule, Biobío, Araucanía, Los Lagos, Aisén, and Magallanes Regiones of Chile and the Río Negro and Santa Cruz provinces of Argentina.

Argentín: Río Negro: 1 female, Catedral, 28.I.1949, W. Wittmer, 1600 m (NZAC); 1 male, Lago Trébol, Bariloche, 23.XI.1950 (NZAC). 

Santa Cruz: 1 male, Moreno Glaciar, P.N. Los Glaciares 50° 28'S 73° 02'W, 27.II.1985, A. C. Ashworth, mixed Nothofagus forest, on Escallonia along lake shore (NZAC). 


Araucanía: 5 males, 3 females, Malloco, La Fusta, 9.XII.1959, 800 m (NZAC); 1 male, Malloco, Lago Malloco, 24.I.1946, 1150 m (NZAC); 4 males, 4 females, Malloco, Piedras del Aquila, 29.XII.1988, T. Cekalovic (DGKC); 1 male, 1 female, Malloco, Sierra Nevada, 5.I.1962, [L. E. Peña] DG Kissinger Coll (DGKC); 2 males, Termas de Toluca, 15-25.I.I.1959 (NZAC); 2 females, Arauco, Caramavida [West slope of Nahuelbuta Range, approx 37° 40'S, 73° 19'W], 20.XII.1956, 1200 m (NZAC); 1 female, Volcán Lonquimay [38° 23'S, 71° 36'W], 22.XII.1994, G. Kuschel, 1400 m (NZAC); 6 females, Cord. Lonquimay, Lago Icalma, 12-17.I.1962, [L. E. Peña] (USNM); 1 males, 2 females, Cord. Lonquimay, Lago Icalma, 17-12.I.1962, [L. E. Peña] DG Kissinger Coll (DGKC); 5 males, 5 females, Icalma, 29-31.XII.1958 (NZAC); 11 males, 7 females, P.N Conguillío, 12.XII.1990, G. Kuschel, 1000 m, Nothofagus pumilum (NZAC); 5 males, 9 females, Cautín, Nueva Imperial, Chacano, 17-23.II.1951, L. E. Peña, 600-700 m (USNM). 2 females, Cautín, NW Nueva Imperial, Pdo Las Selvas, W Temuco, 18.II.1951, L. E. Peña, 600-700 m (USNM); 1 males, 7 females, Liucura, 1-9.II.1959 (NZAC); 1 male, 1 female, Río Blanco, Caracautín, 27-31.III.1959 (NZAC). 

Los Lagos: 3 females, Valdivia, Panguipulli, XII.1951, Gutierrez (NZAC); 3 males, Valdivia, Santo Domingo, 25.II.1976, T. Cekalovic (DGKC); 1 female, Valdivia, Santo Domingo, 5.X.1975, E. Krahmer (DGKC); 2 females, Valdivia, Valdivia, 12.X.19816, E. Krahmer (DGKC); 3 males, 1 female, Osorno, 10 km E Puyehue, 24.I.1951 (NZAC); 1 male, 1 female, Osorno, 20 km E Puyehue, 26.I.1951, R. M. (NZAC); 3 males, 3 females, Osorno, Antillanca Airfield, Site 33A, P.N de Puyehue, 22.II.1979, A. C. Ashworth, J. W. Hoganson, On Chusquea sp, 1970 m, subantarctic forest (USNM); 1 female, Osorno, Antillanca, Puyehue, 18.III.1955, 1000m, Col. L. E. Peña (NZAC); 1 male, Osorno, Cardal, 11.I.1990, T. Cekalovic (DGKC); 3 males, 2 females, Chiloé, Malalcahuello, 1-9.II.1959 (NZAC); 2 females, Cordillera de la Luna, 15.III.1989, [L. E. Peña] (USNM); 1 females, Cordillera de la Luna, 28.IV.1989, [L. E. Peña] (USNM).

**Noterapion nothofagi Kissinger**

new species

Figs. 21, 22, 27

**Distinctive characters.** Length less than 3.00 mm; pronotum with denser, deeper punctures (Fig. 6). Femur 1 of both sexes lacks pseudotrochanter. In profile rostrum short, straight (Fig. 22); apical ventral margin of hypostomal area produced into angular or acute projection (Fig. 21); dorsal margin of head not constricted behind eyes; ventral surface of head evenly (or with slight convexity) ascending from base of head to base of rostrum (Fig. 22). In dorsal view female rostrum sides convergent from base to near insertion of antenna (Fig. 27), in apical half with 2 rows of distinct specialized setae. Scutellum short, broad. Tibia 3 straight. Sternal processes separating mesocoae not prominent; mesosternum not dentate. In profile dorsal margin of median lobe of aedeagus abruptly curved downward near orifice and curved upward slightly at tip; endophallus lacks basal process.

**Description.** General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 1899-3040; width 1024-1481. Rostrum in profile with sides subparallel throughout except in apical 0.25 may have dorsal margin broadly convergent with straight ventral margin to apex; of male 548-730; long; 0.92-1.07 as long as prothorax; in basal 0.5 punctures deep, close, 18-37; in diameter, bearing fine suberect scales 37-65; long, in apical 0.5 punctures finer, sparser, bearing fine suberect setae 18-28; long, ventral sublateral sulcus (VLS) varies from shallow to indistinct, with 7-9 punctures bearing erect setae 45-65; long, apical ventral margin of hypostomal area produced into angular or acute projection; in dorsal view sides beyond short basal convergence subparallel in basal 0.5, subparallel in apical 0.25; male antenna inserted at basal 0.45-0.50 of rostrum at distance in front of eye 1.72-2.30 width of frons; dorsal margin of scrobe with anterior portion slightly inclined to posterior portion, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female 530-768 long; 0.98-1.22 as long as prothorax; in profile straight (at least in basal 0.6) (Fig. 22), surface alutaceous, sides subparallel throughout, in basal 0.5 punctures as in male, bearing fine suberect setae 30-46; long, in apical 0.5 punctures finer, sparser, bearing suberect setae 18-28; long, ventral sublateral sulcus indicated by row of punctures bearing erect setae 46-65; long, ventral submedian sulcus similar, apical ventral margin of hypostomal area produced into angular or acute projection; in dorsal view sides subconvergent from base to insertion of antennae, convergent slightly to narrowest point beyond insertion of antenna, slightly divergent to apex (Fig. 27), median region of rostrum may be polished, with minute punctures bearing suberect setae 18-37; long; female antenna inserted at basal 0.42-0.47 of rostrum at distance in front of eye 1.61-1.87 width of frons; dorsal margin of scrobe and
subcephalic ridge as male. Head with frons 138-201µ wide; 0.89-1.24 as wide as dorsal tip of rostrum; flat; scales on head distinctly coarser and longer than those on rostrum, 40-74µ long; in profile head broadly conical, widest at base, dorsal margin flat, slightly ascending above basal margin of eye, with 2 specialized erect setae above dorsal-basal quadrant of eye; ventral surface flat, may be slightly rounded below middle of eye (especially in female). Prothorax 474-786µ long, at base 1.00-1.26 as wide as long; basal margin strongly, acutely expanded laterally, sides at middle subequal to base, rounded to slight apical constriction; pronotum with shallow, dense punctures 18-37µ in width bearing scales similar to head, interspaces flat, narrow, alutaceous; in profile dorsal margin nearly flat, laterally punctures and scales similar to disk of pronotum; basal fovea lacking. Scutellum short, broad. Elytra at humeri 1.31-1.57 as wide as pronotum base; 2.30-2.99 as long as prothorax; 1.16-1.52 as long as wide; interval 2 at middle of elytra 1.9-2.1 X stria, moderately convex, with 3-5 rows of scales similar to pronotum; intervals with erect specialized setae 40-90µ long scattered along length as follows: 1 with 5-9, 3 with 5-6, 5 with 4-7, 7 with 2, and 9 with 1 near apex (female may have additional 1 near base); striae moderately coarse, deep, with scales similar to adjacent interval, on apex striae join 1+2+9, 3+4, 5+6, 7+8 (2 may be prolonged before joining 1 + 9). Male characters: Tibia 2 with simple macro 35-55µ long; tibia 3 with simple macro 55-74µ long. Median lobe of aedeagus 491µ long (excluding posterior apophyses), strongly depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophyses is 3.2; in dorsal view sides subparallel from base to near orifice, evenly narrowing to 61µ wide tip, tip simple; in lateral view sides subparallel from base to near orifice, slightly, evenly curved from base to orifice, dorsal margin abruptly curved ventrally, tip 9µ wide, curved up slightly; posterior apophyses broad, 0.81 as long as body of median lobe; endophallus lacks structure at base of median lobe, near orifice with 2 hook-like frena 49µ long X 37µ wide. Basal piece of terminal apodeme articulates with postfenestral plate; parameres fenestrae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing macrochaetae; basal median area of parameres flat.


**Etymology**. The specific name is based on the host genus, *Nothofagus* Blume.

**Distribution**. The range is between latitude 34°55'S and 54°55'S in the Maule, Biobío, Araucanía, Los Lagos, Aisén, and Magallanes Regiones of Chile and Río Negro Province of Argentina.

**TYPE MATERIAL**. Holotype male labeled Chile:


spelling Manzanares], 19-21 XII.1976, H. F. Howden, 1100m (CMNH). 1 male, 1 female, Chile: [Araucania]: PN Conguillío, 12.XII.1990, G. Kuschel, Nothofagus punilio (NZAC). 1 male, Chile: [Araucania]: Cautín, 30 km NE Villarica, 16-31.XII.1962, (USNM). 1 male, 1 female, Chile: [Araucania]: Cautín, 30 km NE Villarica (USNM). 1 male, Chile: [Araucania]: Cautín, 10 km S Pucon, Vol. Villarica N. P., 15.XII.1984-10.II.1985. S. & J. Peck, FIT, 900m, Nothofagus groove on ash. (CMNH). 1 male, 2 females, Chile: [Los Lagos]: Valdivia, 3 km W Las Lajas, W La Union, C. Bellamy, 10-11.I.1989, 650m (CMNH). 1 male, Chile: [Los Lagos]: Valdivia, Santo Domingo, 5.X.1975, K. Krahmer, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, 19 km S Ancud, 14.II.19779, Ashworth, Hoganson, Gordon, Site C2m El 120m, Valdivian Rain Forest, on Nothofagus sp (USNM). 1 male, 1 female, Chile: [Los Lagos]: Isla Chiloé, 5 km S Compu, 10.II.1999, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, Compu Alto, 18.I.1998, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 2 males, Chile: [Los Lagos]: Isla Chiloé, Piruquina, 16.II.1995, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, Piruquina, 16.II.1995, T. Cekalovic, CMNH. 1 male, 3 females, Chile: [Los Lagos]: Isla Chiloé, Río Dongo, 9.I.2000, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 4 females, Chile: [Los Lagos]: Isla Chiloé, San Juan de Chadmo, 18.II.1998, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 2 females, Chile: [Los Lagos]: Isla Chiloé, San Juan de Chadmo, 10.II.1999, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, San Juan de Chadmo, 20.II.1997, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, Piruquina, 16.II.1995, T. Cekalovic, CMNH. 1 male, 3 females, Chile: [Los Lagos]: Isla Chiloé, Río Dongo, 9.I.2000, T. Cekalovic, DG Kissinger Collection 2001 (DGKC). 1 female, Chile: [Los Lagos]: Isla Chiloé, Piruquina, 16.II.1995, T. Cekalovic, CMNH. 1 male, 3 females, Chile: [Los Lagos]: Isla Chiloé, Rostrum of male more strongly so on dorsal margin, sides parallel in middle and diverging to apex (Fig. 13). Scutellum elongate (Fig. 14). Tibia 3 straight (Fig. 10). Sternal processes aedeagus abruptly curved downward near orifice and strongly expanded to apex (Fig. 13). Scutellum elongate (Fig. 14). Tibia 3 straight (Fig. 10). Sternal processes separating mesocoxae not prominent; mesocoxa not dentate. In profile dorsal margin of median lobe of aedeagus abruptly curved downward near orifice and curved upward slightly at tip (Fig. 2); endophallus lacks basal process.

**Description.** General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 3629-5035μ; width 1572-2099μ. Rostrum of male 1042-1151μ long; 1.11-1.23 as long as prothorax; in profile stout, curved, more strongly so on dorsal margin, sides parallel in basal 0.5, convergent to apex, in basal 0.5 punctures. 3609-5035μ; depth, 28-37μ in diameter, arranged in 5-6 indistinct rows, bearing fine decumbent scales 28-60μ.
long, in apical 0.5 punctures finer, may be elongate, bearing short (<20μm) suberect setae, ventral sublateral sulcus varies from narrow and shallow to broad and deep, with 9-11 punctures bearing erect setae 55-100μ long (longest on apical puncture); in dorsal view sides abruptly narrowed at base, subparallel in basal 0.5, slightly convergent beyond insertion of antenna, divergent at apex; male antenna inserted at basal 0.47-0.52 of rostrum at distance in front of eye 2.43-2.60 width of frons; dorsal margin of scrobe nearly straight, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female 1260-1425μ long; 1.13-1.26 as long as prothorax; vestiture and sculpture as in male except sublateral sulcus not impressed, its setae 82-120μ long; in profile distinctly curved, sides convergent from base to insertion of antenna, then more strongly convergent to narrowest point near apical 0.3, divergent slightly to apex; in dorsal view (Fig. 13) sides convergent from base to insertion of antennae, strongly convergent to apical 0.4, strongly divergent to apex; female antenna inserted at basal 0.45-0.49 of rostrum at distance in front of eye 2.29-2.71 width of frons. Head with frons 192-264μ wide; 0.90-1.04 as wide as dorsal tip of rostrum, flat; scales on head distinctly coarser and longer than those on basal 0.5 of rostrum, male 55-110μ long, female 46-83μ long, slightly finer than male; in profile head narrowly cone-shaped, widest at base, sides evenly convergent from somewhat basad of basal margin of eye to somewhat distad of anterior margin of eye, dorsal margin slightly ascending above basal margin of eye, with 8-10 specialized erect setae 55-75μ long in line above dorsal-basal quadrant of eye and continuing onto base of head; ventral surface of head virtually flat. Prothorax 849-1169μ long, at base 0.95-1.02 as wide as long; basal margin strongly, acutely expanded laterally, sides arcuately expanded to widest point near middle, rounded to broad apical constriction; pronotum flattened, with deep, dense punctures 27-46μ in width bearing scales 64-100μ long, interspaces flat, narrow, coarsely alutaceous; in profile dorsal margin slightly convex, flattened basally and apically, laterally punctures and scales similar to disk of pronotum; basal fovea lacking. Scutellum elongate (Fig. 14). Elytra at humeri 1.29-1.38 as wide as pronotum base; 2.60-2.84 as long as prothorax; 1.46-1.66 as long as wide; interval 2 at middle of elytra 1.5-1.7 X stria, moderately convex, with 4-5 rows of scales similar to pronotum; intervals with long (>60μ), erect specialized setae scattered along length as follows: 1 and 3 with 4-10+, 5 with 2-7, 7 with 2-3, and 9 with 1 near apex; striae coarse, deep, with scales slightly longer than adjacent interval, on apex striae join 1+2+9, 3+4, 5+6, 7+8. male characters: Tibia 2 with simple micro 55-92μ long; tibia 3 with simple micro 55-92μ long. Median lobe of aedeagus 837-855μ depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophysis is 2.6-3.1; in dorsal view sides subparallel from base to near orifice, evenly narrowing to 80-82μ wide tip, tip simple; in lateral view (Fig. 2) sides subparallel from base to near orifice, slightly, evenly curved from base to orifice, dorsal margin abruptly curved ventrally, tip 15-24μ wide, curved upward; posterior apophyses broad, 0.83-0.89 as long as body of median lobe; endophallus lacks structure at base of median lobe, near orifice with 2 hook-like frena 98-122μ long X 49-86μ wide. Basal piece of tegminal apodeme articulates with postfenestral plate; parameres fenestratae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing macrochaetae; basal median area of parameres flat.

**Biology.** Unknown.

**Distribution.** The range is between latitude 36° 50' S and 42° 30' S in the Biobío, Araucanía, and Los Lagos Regiónes of Chile and Neuquén province of Argentina. **Argentina:** 1 female, Province de Neuquén (MNHN). **Chile:** Biobío: Ñuble: Termas Chilílán (NZAC). Araucanía: 1 male, Cañitín, Cherqueno, III.1954, L. E. Peña (NZAC); 1 male, 3 females, Nueva Imperial, Chacamo, 17-23.II.1981, L. E. Peña, 600-700 m (USNM). 1 male, 1 females, Malleco, Cord. Nahuelbuta, 6-12.I.1982, 1300 m, L. Peña (CMNH); 1 female, Pichinahuel, Arauco, I. 1989, G. Barria (NZAC); Arauco, Pilfímpili (NZAC); 1 male, 4 females, Pichinahuel, 23-31.XII.1958-31.I.1959 (NZAC); 1 female, W Temuco, Chacamo, 7-10.XII.1981, 600 m, L Peña (CMNH). **Los Lagos:** 2 females, Chiloé, Isla Chiloé, Piruquina, 16.II.1995, T. Cekalovic (DGKC); 1 male, Los Muermos, 19.I.1951, R. M., forest (NZAC).

The definition of Apion bruchi Béguin-Billecocq is based on a photograph of the female type in the Oberthur Collection (MNHN) taken by D. G. Kissinger in 1965.

**Noterapion chilense** Kissinger **new species**

Figs. 17, 18

**Distinctive characters.** General aspect black, tarso and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length less than 3.00mm; pronotum with sparse, shallow punctures (Fig. 17, 18). Femur 1 of both sexes lacks
pseudotrochanter. Rostrum lacks hypostomal prominence (Fig. 20); in profile rostrum distinctly curved; in dorsal view female rostrum largely subparallel throughout; dorsal margin of head not constricted behind eyes; ventral surface of head flat. Scutellum narrowly triangular (Fig. 18). Elytral striae coarse, deep, about as wide as intervals. Tibia 3 straight.

Sternal processes separating mesocoxae not prominent; mesocoxa not dentate. In lateral view dorsal margin of median lobe of aedeagus abruptly curved ventrally, tip somewhat curved dorsally; endophallus lacks structure at base of median lobe.

**Description.** Length 2318-2850µ; width 1078-1280µ. General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Rostrum lacks hypostomal prominence; of male 658-804µ long; 1.23-1.29 as long as prothorax; finely alutaceous throughout; in profile moderately stout, dorsal margin broadly arcuate, ventral margin nearly straight, sides parallel in basal 0.75, convergent slightly to apex, in basal 0.5 with shallow, somewhat indistinct punctures 18-37µ in diameter, bearing fine decumbent setae 25-45µ long, in apical 0.5 surface more polished, punctures well separated, deeper, somewhat elongate, bearing short (<20µ) suberect setae, ventral sublateral sulcus (VSLS) marked by row of 7-9 suberect setae bearing erect setae 25-55µ long; in dorsal view sides subparallel in basal 0.5, base and insertion of antenna and apex subequal in width, narrowest point beyond insertion of antenna; male antenna inserted at basal 0.42-0.49 of rostrum at distance in front of eye 2.30-2.56 width of frons; anterior part of dorsal margin of scrobe slightly oblique to rest of margin, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female 896-1042µ long; 1.53-1.54 as long as prothorax; sculpture and vestiture much as male but more slender; in profile both dorsal and ventral margins curved, sides subparallel throughout; in dorsal view sides largely subparallel throughout, width at base, insertion of antenna and apex subequal, narrowest point beyond insertion of antenna; female antenna inserted at basal 0.42-0.44 of rostrum at distance in front of eye 2.42-2.95 width of frons; dorsal margin of scrobe as male. Head with frons 119-155µ wide; 0.77-0.89 as wide as dorsal tip of rostrum, flat; scales on head distinctly coarser and longer than those on basal 0.5 of rostrum, 37-65µ long; in profile head narrowly cone-shaped, widest at base, sides evenly convergent from somewhat basad of basal margin of eye to somewhat distad of anterior margin of eye, dorsal margin slightly ascending above basal margin of eye, with 2-4 specialized erect setae 35-55µ long in line above dorsal-basal quadrant of eye; ventral surface of head virtually flat. Prothorax 512-676µ long, at base 0.97-1.07 as wide as long; basal margin strongly, acutely expanded laterally, widest at base, sides subparallel in basal half, slightly convergent to shallowly constricted apex; pronotum (Fig. 18) with sparse shallow punctures 18-37µ in diameter, bearing scales 37-65µ long, interspaces flat, coarsely alutaceous, tend to be wide along central quadrant from base to apex where punctures are smaller and more widely separated; in profile dorsal margin nearly flat, laterally scales may be longer and coarser than on disk of pronotum; basal fovea lacking. Scutellum narrowly triangular (Fig. 18). Elytra at humeri 1.33-1.50 as wide as pronotum base; 2.57-2.92 as long as prothorax; 1.25-1.48 as long as wide; intervals at middle of elytra 1.0-1.5 as wide as stria, convex, with 3-4 rows of scales 55-74µ long, denser and slightly longer than vestiture on pronotum; intervals with long (>55µ), erect specialized setae scattered along length as follows: 1 with 3-6, 3 with 3, 5 with 1, 7 with 1, and 9 with 1 near apex; striae (Fig. 17) coarse, deep, with scales similar to adjacent interval, on apex striae 1 and 2 and 9 are isolated, any connection between them is very shallow, 3+4, 5+6, 7+8. Femur 1 lacks pseudotrochanter. Tibia 3 straight. Sternal processes separating mesocoxae not prominent. Male characters: Tibia 2 with simple mucro 46-55µ long; tibia 3 with simple mucro 55-64µ long. Median lobe of aedegagus 728µ long (excluding posterior apophyses), depressed, the ratio of the dorsal width and lateral depth of the median lobe at the junction with the posterior apophyses is 1.6; in dorsal view sides subparallel from base to near orifice, evenly narrowing to 66µ wide tip, tip simple; in lateral view sides subparallel from base to near orifice, slightly, evenly curved from base to orifice, there dorsal margin abruptly curved ventrally, tip 39µ wide; posterior apophyses broad, 0.70 as long as body of median lobe; endophallus lacks structure at base of median lobe, near orifice with 2 hook-like frena 61µ long X 36µ wide. Basal piece of tegmental apodeme articulates with postfenestral plate; parameres fenestrae not visible; apical lobes long, moderately slender, lightly sclerotized, at apex with more heavily sclerotized plate bearing macrochaetae; basal median area of parameres flat.

**Biology.** Collected on *Nothofagus antarctica* (G. Forst.) Oerst., *N. betuloides* (Mirbel) Blume, and *N. dombeyi* (Mirbel) Blume based on label data and G. Kuschel (pers. comm.).
Distribution. The range is between latitude 34°58' S and 54°55' S in the Maule, Biobio, Araucania, Los Lagos, and Magallanes Regiones of Chile and the Río Negro province of Argentina.


Etymology. The specific name is based on the name of the country Chile.

Noterapion saperion Kissinger new species
Figs. 11, 12A-C

Distinctive characters. Length less than 3.90mm; pronotum with denser, deeper punctures (Fig. 16). Femur 1 of both sexes lacks pseudotrochanter. Rostrum lacks hypostomal prominence (Fig. 20); in profile rostrum distinctly curved; in dorsal view female rostrum largely subparallel throughout; dorsal margin of head not constricted behind eyes; ventral surface of head flat. Scutellum somewhat elongate. Tibia 3 inner margin convex (Fig. 11). Sternal processes separating mesocoxae very prominent (Fig. 12B); mesocoxae dentate (Fig. 12C). In profile dorsal margin of median lobe of aedeagus abruptly curved downward near orifice and curved upward slightly at tip (Fig. 2), tip robust; endophallus lacks basal process.

Description. General aspect black, tarsi and antenna dark piceous. Vestiture silvery white, fine, decumbent, moderately dense, uniform. Length 2963-3875μ; width 1260-1790μ. Rostrum of male 964-1114μ long; 1.23-1.34 as long as prothorax; surface polished throughout; in profile slender, curved, sides parallel in basal 0.5, slightly convergent to apex, in basal 0.6 punctures deep, somewhat elongate, tend to be confluent, 18-37μ in length, arranged in indistinct rows, behind insertion of antenna bearing fine decumbent setae 25-56μ long, in apical 0.2 punctures finer, sparser, bearing suberect setae 12-18μ long, ventral sublateral sulcus (VSLS) shallow with 8-11 somewhat indistinct punctures bearing erect setae as on adjacent rostrum except terminal seta 56μ long; in dorsal view sides in basal 75μ converge to 0.85 width of base, subparallel in basal 0.5, narrowest point beyond insertion of antenna, divergent to apex; male antenna inserted at basal 0.43-0.47 of rostrum at distance in front of eyes 2.31-3.06 width of frons; dorsal margin of scrobe nearly straight, ending slightly basad of anterior margin of eye, subcephalic ridges flat, low, short. Rostrum of female 1004-1298μ long; 1.33-1.49 as long as prothorax; surface polished throughout; in profile sides subparallel throughout, curved, more strongly so in apical 0.5, punctures finer and sparser than male, sparser setae 18-28μ long, VSLS not apparent, its apical puncture with seta 40-50μ long; in dorsal view in space of 90μ from base sides converge 0.69, subparallel to insertion of antenna, beyond insertion of antenna in space of 90μ sides converge 0.79, in apical 0.2 divergent to apex where is 1.10-1.20 width at insertion of antenna; female antenna inserted at basal 0.36-0.41 of rostrum at distance in front of eye 2.10-2.55 width of frons; dorsal margin of scrobe as in male. Head with frons 164-230μ wide; 0.82-1.14 as wide as dorsal tip of rostrum; scales on head distinctly coarser and longer than those on basal 0.5 of rostrum, 45-90μ long; in profile head narrowly cone-shaped, widest at base, sides evenly convergent from somewhat basad of basal margin of eye to somewhat distad of anterior margin of eye, dorsal margin slightly ascending above basal margin of eye with 3-6 specialized erect setae 40-65μ long in line above dorsal-basal quadrant of eye and continuing onto base of head; ventral surface of head virtually flat. Prothorax 712-932μ long, at base 0.94-1.09 as wide as long; basal
Distribution. The range is between latitude 36° 50' S and 38° 44' S in the Biobío and Araucania Regiones of Chile.

**Biology.** Collected on *Nothofagus antarctica* (G. Forst.) Oerst. based on label data and G. Kuschel (in litt.).


**Etymology.** The specific name is Greek, of neuter gender, and means “an unknown animal” (Brown, 1956, p. 91).

**Comment on mesocoxae of N. saperion.** The species *N. saperion* is remarkable even among a group of remarkable species. Unlike other *Noterapi* spp., the union of the meso- and metasternal processes between male and female mesocoxae consists of two vertical cylindrical structures projecting ventrally well below the sternal surface (fig. 12B: the structures involved were enhanced for contrast with Photoshop). This arrangement may be a precursor for...
the derivation of character \#40 state (1), “mesocoxal cavities contiguous”, which is a synapomorphy occurring in Rhadinocybinae, Neocyba Kissinger, Aplemonini, Piezotrichelini, Rhinorhynchidius Voss, Podapion Riley, Chilapion Kissinger, Circapion Kissinger, and Chrysapion Kissinger (Wanat, 2001 and Kissinger, 1968). A later discussion will suggest a position for Noterapion as a tribe basal to most of the groups in Apioninae that have contiguous mesocoxal cavities.

Both sexes of *N. saperion* have the mesocoxae dentate on the posterior margin (fig. 12C); this the only female New World apionid known to have dentate coxae. Among New World apionids, males in very scattered groups have dentate coxae: *Trichapion whiteheadii* (A.-Z.), and congeners (coxa 1), *Trichapion sleeperi* (Kissinger) (coxa 1), *Kissingeria seminuda* (Wagner) (coxa 2), *Bothryopteron larium* (Kissinger) (coxae 1 and 2), and *Circapion circipenne* (Wagner) (coxa 2).

The significance of female *N. saperion*’s dentate mesocoxa as may be as follows. Some of the possible antecedents of Noterapion, such as Antliarhininae or Tanainae, share a synapomorphy with *Noterapion*, character \#62 state (0), “Endophallus with paired frena” (Wanat, 2001), a character not found elsewhere in Apioninae. Antliarhininae and Tanainae also possess character \#43, state (0), “Pre- and mesocoxa apically with a minute dentiform process limiting rotation of trochanter” (Wanat, 2001). There is a possibility that the dentate mesocoxa of *saperion* is another state of character \#43. The fact that both sexes of *N. saperion* have the mesocoxae dentate argues against the trait appearing for the benefit of male sexual advantage, as for males of species listed above. Recent advances in gene sequence discoveries show that the Hox clusters of homeotic genes controlling Bithorax and Antennapedia development in *Drosophila* (where an antenna has been transformed into a leg during development) also occur in a wide range of animals: echnidemers, beetles, flies, nematodes and vertebrates (mice) (Raff 1996, p. 183). The significance here is the possible presence of “The Specific Gene(3), i.e. character \#43, in all nodes from the least advanced to the most advanced members of an apionid lineage regardless of expression in the phenotype at intermediate nodes. Raff further concludes, “Two kinds of gene evolution have occurred: changes in patterning and changes in downstream genes that execute the pattern.... the evolution of novel regulatory patterns in the Hox genes led to the modern pattern of limb and wing expression. It appears that these patterns resulted from alterations in the control of expression, not from the evolution of new Hox genes” (Raff, 1996, p. 413-414). I am not saying that Hox genes are involved in the expression of character \#43 in Noterapion but that they serve as a useful model in attempting to understand character development in Apionidae, etc. For instance, slight changes in interacting genes controlling the morphogenesis of character \#43 may produce an apparently new state so unexpected and unrelated that it is not recognized as pertaining to \#43.

**Phylogenetic Position of Noterapion Kissinger**


Wanat analyzed table 51 using Hennig86 option “ie” (Farris, 1988) and produced 3 minimum length trees each with 196 steps and a consistency index of 0.440 (Wanat, 2001, figure 820); the 3 trees were identical except for differences in the arrangement of *Cybebus*, *Myrmacielus* and *Lispothereum*. Kissinger analyzed table 51 using PAUP (Swofford 1985) with options set to default except Caridae selected as
Tribe Noterapionini, new tribe

**Type genus:** Noterapion Kissinger, 2002. The characters of the tribe are based on *Noterapion*; the bold face numbers correspond to the list of characters in Wanat (2001). A member of Apioninae, With 9-striate elytra (#28), male pygidium of apionine type (#54). Specialized setae numerous on intervals 1, 3, 5, and 7 (#29). Endophallus with paired frena (#62). Endophallic flagellum always absent (#63). Mesocoxal cavities separated (#40). Trochanter short, femur not touching coxa (#44). Pro- and mesocoxa apically with dentiform process vestigial or absent (#43). Base of notum with a fringe of setae (#23). Apical sutural setae on elytra well developed (#32). Inferolateral flange of elytra vanishing far from elytral suture (#33).

Character #28 with state (3) 9-striate elytra, “stria 10 reduced to a short link between equally spaced apices of striae 1 and 2 or absent, the 10th interval absent”. This is an important synapomorphy held in common with all members of Apioninae except Chilapiitae; Noterapionini is the lowest category in Apioninae that shows state (3). (Setapion Balfour-Browne is the only non-apionine that shows this character; currently its position is in or between Tanainae and/or Mecoleninae and is under study by Wanat.)

Character #54 male pygidium type of state (2) “apionine”. This is a synapomorphy shared with Cybebinae, Mecoleninae, Podapiitae, and Apionitae.

Many of the following characters represent synapomorphies with subfamilies of Apionidae more basal than Apioninae, but otherwise do not occur in Apioninae.

Character #29 with state (0), “specialized setae numerous on all odd intervals”. Regarding the multiple specialized setae, Alonso-Zarazaga (1989, p. 217 fig. 9, left side) illustrated the arrangement of multiple specialized setae along alternate elytral intervals 3 to 9 for a hypothetical primitive apionid. Noterapion spp. show essentially this pattern except that interval 1 has multiple setae and interval 9 has (usually) 1 specialized seta near its apex. Some members of Mecoleninae such as *Apiomorphus* Wagner and *Lepanomus* Balfour-Browne have numerous erect specialized setae scattered regularly along the length of intervals 1-8; the exact placement of these genera is under study by Wanat. Compared with Mecoleninae, some distinctive features about the multiple setae of Noterapion are that they are on odd intervals (1-7) and tend to be sparse and irregularly distributed; also the intervals have moderately dense, fine, silvery white, decumbent scales, in addition to the setae. As defined by Wanat state (0) is symplesiomorphic with Caridae, Rhadinocybini, Apiomorphus, Eurhynchidae, and Nanophyidae. As redefined here, this appears to be an autapomorphy for Noterapion and may represent a separate state.

Character #62 endophallus with state (0), “with paired frena”. This is symplesiomorphic with Caridae, Myrmacelinae, Mecoleninae, Cybebinae, Tanainae, Antiarhininae, Eurhynchidae, Nanophyidae, Brentidae, and *Ithycerus* Schoenherr. This state is absent in all other New World apionids; it probably indicates a position in Apioninae more basal than Chilapiitae.

Character #63 endophallic flagellum with state (1), “always absent”. This is synapomorphic with Mecoleninae, Tanainae, Antiarhininae, and Apioninae. *N. meorrhynchum* (Philippi and Philippi) has an endophallic process that may be the derived remnants of a flagellum.

Character #40 mesocoxal cavities with state (0), “separated”. This is symplesiomorphic with Caridae, Curculionidae, Myrmacelinae, Mecoleninae, Cybebinae, Tanainae, Antiarhininae, Aspidapiitae, Eurhynchidae, Nanophyidae, and Brentidae. The aberrant meso- and metasternal structures of *N. saperion* Kissinger suggest that at least one line of modifications which resulted in open mesocoxal cavities may have started in the Noterapion complex. If this is so then Noterapion could well be basal to Chilapiion.
Character #44 trochanter state (1), “short, femur not touching coxa”. This is synapomorphic with Antliarhininae, Tanainae, Mecoleninae, Rhinorhynchiidiitae, and Podapiitae. The pseudotrochanter of *N. meorrhynchum* (Philippi and Philippi) may suggest how a “normal-sized” trochanter (state 2, trochanter elongate) was developed in Apionidae, which could argue for a position basal to other taxa with trochanter state (2), “trochanter elongate”.

Character #43 pro- and mesocoxa apically with state (1), “dentiform process vestigial or absent”. This is synaplesiomorphic with Cyladini, Nanophyidae, Apioninae, Cybieninae, Myrmacicolinae, and Rhadinocybinae. This character apparently appears in a new guise on the non-articular surface of the mesocoxa of *N. saperion* Kissinger “as an ornament” (Fig. 12C). This is the possible origin for the dentate coxa found in some male apionids.
Character #23 base of notum with state (0), “with a fringe of setae”. This is synaplesiomorphic with Curculionidae, Mecoleninae, Tanainae, Antliarhininae, Euryhynchidae, Nanophyidae, Brentidae, and Podapiitae.

Character #32 apical sutural setae on elytra with state (1), “well developed”. This is synapomorph with Antliarhininae and Tanainae.

Character #33 inferolateral flange with state (0), “vanishing far from elybral suture”. This is synaplesiomorphic with Caridae, Neocryba, Chilapiitae, Rhinorhynchidiitae, Podapiitae, Apiomorphus, Antliarhininae, Euryhynchidae, and Nanophyidae.

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This paper is contributed in memory of Dr. Ross Arnett, a valued mentor and friend.

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