

**AESHNA TINTI SPEC. NOV. FROM CHILE
AND REDESCRIPTION OF *A. ELSIA* CALVERT
(ANISOPTERA: AESHNIDAE)**

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A. tinti sp. n. is described and illustrated from the Chilean Tarapacá and Antofagasta regions (holotype ♂ and allotype ♀: Chile, Antofagasta, El Loa prov., Tilopozo, 23°49'S 68°15'W, I-1996; deposited at MLP, Argentina). A redescription and drawings of *A. elsia* Calv. are provided, as well as a comparison of the new sp. with all the sympatric *Aeshna* spp.

INTRODUCTION

While searching for Patagonian species of the genus *Aeshna* Fabricius, some specimens of *Aeshna elsia* Calvert, 1952, as well as many of a new species were found in several odonate collections. Collections of both species included specimens taken north of Patagonia. *A. elsia* was described by CALVERT (1952) from specimens from Pacasmayo, Perú. He also included material from Lima, Pachitea, vicinity of Chosica, vicinity of Villa and Repartición (Perú), Tacna, Azapa, Miñi-Miñi and Curicó (Chile), and "Patagonia". As the description and later redescription of *A. elsia* (CALVERT, 1952, 1956) do not easily allow its separation from the other species of the subgenus *Neureclipta* Navás, 1911 (sensu CALVERT, 1952), a redescription is included, together with the description of a new species of the subgenus *Hesperaeschna* Cockerell, 1913.

For the wing venation the terminology given by RIEK & KUKALOVÁ-PECK (1984), and for the description of the abdominal colour pattern that proposed by WALKER (1912). Material examined is deposited at the following collections:

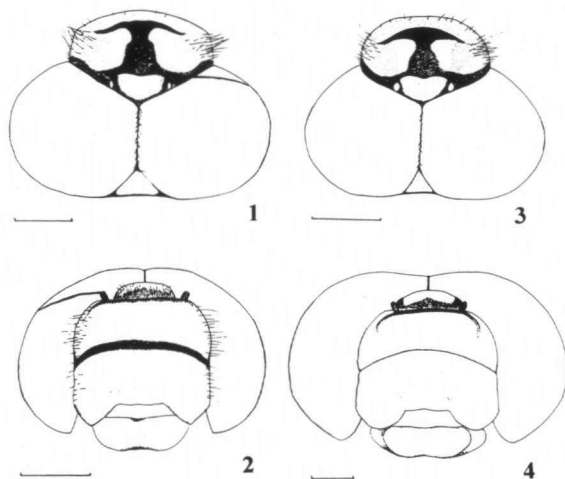
- MLP – Departamento Científico Entomología, Museo de La Plata, Buenos Aires, Argentina;
- FML – Fundación Miguel Lillo, Tucumán, Argentina;
- MNHN – Museo Nacional de Historia Natural de Santiago, Chile;
- IEUM – Instituto de Entomología, Universidad Metropolitana de Ciencias de la Educación, Santiago, Chile;
- UMMZ – University of Michigan, Museum of Zoology, MI, U.S.A.
- RWG – Rosser W. Garrison Collection, Los Angeles, CA, U.S.A.

AESHNA TINTI SP. NOV.

Figures 1-2, 5, 7, 9, 11, 13-14, 17-19, 23; Tables I, II

Material. – **Holotype** ♂: Chile, Antofagasta, El Loa prov., Tilopozo, 23°49'S 68°15'W, I-1996 (MLP); **Allotype** ♀: same data as holotype (MLP); **Paratypes**: 1 ♀ Chile, Tarapacá, Iquique prov., Mamiña, 20°05'S 69°14'W, 2800 m, Herrera leg., 8/16-XI-1964 (IEUM); 1 ♂ Chile, Tarapacá, Iquique prov., Quebrada de Guatacondo, 20°55'S 69°07'W, P. Millas leg., 25-X-1968 (MNHN); 1 ♂, 1 ♀ Chile, Antofagasta, Tocopilla prov., Quillagua, 21°38'S 69°34'W, J. Solervicens leg., 3-X-1970 (MNHN); same data except for 1 ♀, H. Villaroel leg. (MNHN); 1 ♂ Chile, Antofagasta, El Loa prov., Riberas del río Loa (MNHN); 1 ♂, 1 ♀ Chile, Antofagasta, El Loa prov., Linzor, 22°13'S 68°01'W, 4200 m, Etcheverry leg., 21-II-1967 (IEUM); same data except 1 ♀ (MLP); 1 ♀ Chile, Antofagasta, El Loa prov., Río Salado, Etcheverry leg., 12-XII-1966 (IEUM); 2 ♂ Chile, Antofagasta, El Loa prov., Chiuchiu, 22°22'S 68°38'W, G. Arriagada leg., 25-X-1982 (MNHN); same data except 2 ♂ (MLP); 2 ♂ Chile, Antofagasta, El Loa prov., Calama, 22°27'S 68°55'W, 2400 m, Montero leg., 7-II-1964 (IEUM); same data except 1 ♂ (MLP); same data except for 1 ♀, Herrera leg., and 1 ♀, Etcheverry leg., 16-XII-1966 (IEUM); 3 ♂ Chile, Antofagasta, El Loa prov., Vilama, little valley 5 km NE of San Pedro de Atacama, L.E. Peña leg., 16/17-V-1952 (UMMZ); 5 ♂, 3 ♀ Chile, Antofagasta, El Loa prov., San Pedro de Atacama, 22°55'S 68°12'W, 2436 m, L.E. Peña leg., 16-IV-1952 (UMMZ); same data except 1 ♂ (MLP); 1 ♀ (RWG); same data except for 1 ♀, 1 tandem, 20/25-II-1960 (UMMZ); same data except for 1 ♀, 28/30-XI-1959 (IEUM); 4 ♂ Chile, Antofagasta, El Loa prov., Tambillo, 21°26'S 69°13'W, L.E. Peña leg., 31-III-1954 (UMMZ); 1 ♂ Chile, Antofagasta, Quitor, 30-XI-1959 (IEUM); 1 ♂ Chile, Antofagasta, El Loa prov., Toconao, 23°12'S 68°02'W, 2400 m, L.E. Peña leg., 27-V-1952 (RWG); same data except for 1 ♂, 27-III-1954 (UMMZ); same data except for 1 ♀, G. Cerdá leg., 8-I-1996 (MNHN); 1 ♀ Chile, Antofagasta, El Loa prov., Toconao a Volcán Lascar, 2450 m, R. Valdés leg., 1-X-1970 (MNHN); 3 ♂ Chile, Antofagasta, El Loa prov., Pocos, creek approx. 10 km from Talabre, 3000 m, L.E. Peña leg., 5-IV-1954 (MLP); 1 ♀ Chile, Antofagasta, El Loa prov., Peine, 23°40'S 68°07'W, 2350 m, Herrera leg., 8-XII-1966 (IEUM); 1 ♂ Chile, Antofagasta,

Antofagasta prov., Antofagasta, 23°38'S 70°24'W, R.L. de Guevara leg., 29-IX-1970 (MNHN); 1 ♀ Chile, Antofagasta, Antofagasta prov., Aguas Blancas, 24°09'S 69°38'W, Herrera leg., 9-I-1966 (IEUM).



Figs 1-4. Head: (1-2) *Aeshna tinti*, ♂ holotype, 1: dorsal view, – 2: anterior view; – (3-4) *Aeshna elsia*, ♂ paratype, 3: dorsal view, – 4: anterior view. – [Scale bar: 2 mm]

Etymology. – From the native Aymará name “tinti”, which means “dragonfly”. The Aymarás people in Chile inhabited the area north to the Loa river.

MALE (holotype). – **Head.** – Labrum yellow; ventral and dorsal margins black; clypeus yellow; distal margin of clypeal lobes angulated (Fig. 2); wide black stripe along fron-

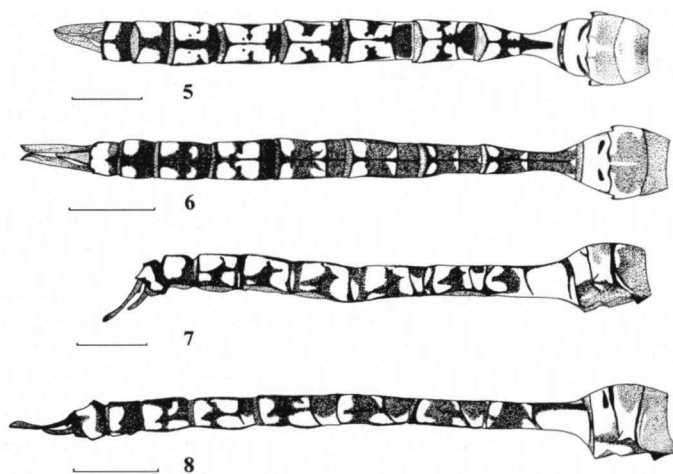
toctypeal groove (Fig. 2); vertical portion of antefrons yellow, horizontal portion of antefrons yellow, with "T" spot always complete and with a rounded greyish spot on each side of the longitudinal stem of "T"; longitudinal stem of "T" wider at its base, abruptly narrowing at distal 0.30 (Fig. 1); postfrons yellow with lateral and posterior margins black. Black stripe along ocular groove, widening towards frontoclypeal groove. Vertex yellow.

T h o r a x. – Pronotum black except white anterior margin of anterior lobe; posterior margin of posterior lobe bearing a fringe of long white hairs. Pterothorax reddish-brown, with small yellow and light blue spots in a position equivalent to the basal end of mesepimeron and distal end of the metepimeral stripes respectively. Neither mesanepisternal stripes nor spots.

Legs with coxae, trochanters and extensor surfaces of femora reddish-brown. Femora, tibiae and tarsi with two longitudinal rows of spines along their flexor margins.

Wings: for venation features see Table II. Membranule black, white at basal 0.20; pterostigma with ventral surface yellow, dorsal surface black; veins black, except yellow C, ScP, antenodals and subnodal crossveins.

A b d o m e n. – Dorsal colour pattern as in Figure 5. Segment 1 dark brown, except posterior 0.50 light blue. Segment 2 with area anterior to transverse carina brown and with a narrow mediolongitudinal light blue stripe; transverse carina with light blue stripe along its anterior margin; area posterior to the transverse carina light blue with a transverse black spot on each side. Segment 3: AD confluent with AL. MD and PD separated by a transverse black stripe. Segment 4 as



3 but without AD. Segments 5-7: AD absent. MD and PD confluent in their medial portion, both approximately the same length.

Segment 8: MD 0.50 as long as PD. Segment 9 light blue, except for the black anterior 0.30, posterior margin and a mediolongitudinal stripe.

Figs 5-8. Male abdominal colour pattern. (5, 7) *Aeshna tinti*, ♂ holotype, 5: dorsal view, – 7: lateral view; – (6, 8): *Aeshna elsia*, ♂ paratype, 6: dorsal view, – 8: lateral view. – [Scale bar: 5 mm]

Segment 10 light blue, except for the anterior 0.50, a mediolongitudinal stripe and the posterior margin black. Dorsal spots light blue in segments 3-8. – Lateral colour pattern as in Figure 7. Segment 1 dark brown, with light blue posterior margin. Segment 2 light blue with reddish-brown ventral 0.30 and a brown dorsal area. Segment 3 with AL occupying the whole area anterior to the transverse carina, ML confluent with MD and PL confluent posteriorly with PD. Segment 4 as in 3 except for smaller AL. Segments 5-7 as 4 except for PL separated from PD by transverse black stripe which borders the lateral carina. Segment 8 with AL absent, ML separated from MD and PL separated from PD. Segments 9-10 light blue with black margins. Segment 9 with anterior black area occupying 0.30 of segment; in segment 10 0.50. Lateral spots of segments 3-8 light blue. Contours of ventral terga delimited by inner and outer lateroventral longitudinal carinae and posteroventral transverse carinae, as shown in Figure 13; reddish-brown with light blue to yellowish reniform spot at anterior 0.50. – Cerci (Figs 17-18) in dorsal view gradually widening to maximum width at basal 0.30. Internal margin

Table I
Measurements (mean \pm standard deviation, in mm; range in square brackets)
of *Aeshna tinti* and *A. elsia*

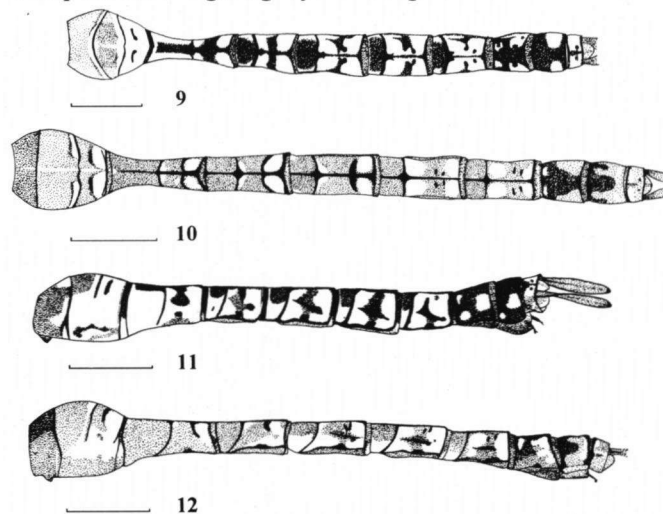
Characters	<i>Aeshna tinti</i>		<i>Aeshna elsia</i>	
	♂ N=34	♀ N=19	♂ N=5	♀ N=7
Head maximum width	8,11 \pm 0,18 [7,7-8,4]	7,73 \pm 0,20 [7,4-8,2]	8,22 \pm 0,34 [7,8-8,5]	8,18 \pm 0,10 [8-8,3]
Ant. ocular margin/frons width	1,96 \pm 0,12 [1,8-2,2]	1,77 \pm 0,10 [1,6-2]	1,94 \pm 0,15 [1,7-2,1]	2 \pm 0,13 [1,8-2,2]
Hind wing length	35,22 \pm 1,04 [33,3-37,8]	35,76 \pm 1,5 [32,2-38,2]	37,16 \pm 1,18 [35,8-38,7]	38 \pm 1,00 [35,9-39]
Hind wing max. width	11,73 \pm 0,38 [10,8-12,4]	12,34 \pm 0,56 [11,4-13,1]	12,42 \pm 0,39 [12-13]	13,03 \pm 0,14 [12,4-13,6]
Pterostigma length	2,59 \pm 0,16 [2,2-2,8]	2,87 \pm 0,19 [2,6-3,2]	3,12 \pm 0,19 [2,8-3,3]	3,26 \pm 0,14 [3-3,4]
Length/width abdominal seg. 4	1,57 \pm 0,10 [1,27-1,82]		1,98 \pm 0,13 [1,95-2,09]	
Cerci length	4,03 \pm 0,15 [3,75-4,3]	4,02 \pm 0,16 [3,8-4,35]	4,45 \pm 0,13 [4,3-4,6]	4,3 \pm 0,17 [4,2-4,5]
Epiproct length	2,07 \pm 0,16 [1,8-2,4]		2,18 \pm 0,11 [2-2,3]	
Cerci/epiproct length	1,95 \pm 0,13 [1,73-2,27]		2,05 \pm 0,16 [1,95-2,3]	
Length ovipositor (external valves)		1,66 \pm 0,05 [1,6-1,75]		1,88 \pm 0,09 [1,8-2]
Body length (incl. caudal appendages)	51,88 \pm 1,38 [49,1-54,8]	49,44 \pm 1,22 [47,3-51,7]	56,4 \pm 1,66 [54,3-58,2]	5,35 \pm 1,48 [54,3-56,4]

slightly concave at distal 0.60 (Fig. 18); subbasal tooth well developed; longitudinal dorsal crest well developed at distal 0.25-0.20 (Fig. 17).

M e a s u r e m e n t s. – See Table I.

Female (allotype). – **H e a d** and **t h o r a x.** – As in holotype, except for the pterostigma ventral and dorsal surfaces yellow.

A b d o m e n. – Dorsal colour pattern as in Figure 9. Segment 1 reddish-brown with light yellow posterior margin. Segment 2: area anterior to transverse carina brown, with a narrow mediolongitudinal light yellow stripe; transverse carina with light yellow stripe along its anterior margin; area posterior to transverse carina light blue with transverse black spot on each side. Segment 3: AD confluent with AL, MD separated from PD by a wide dark-brown area. Segments 6-7: AD absent, MD and PD separated by a black stripe. Segment 7 like 6 except for the confluence of MD and PD. Segment 8: PD and small MD, separated by a wide black area. Segment 9: MD absent. Segment 10 yellow with anterior and posterior margins black and a black mediolongitudinal stripe. Dorsal spots of segments 3-9 light yellow. – Lateral colour pattern as in Figure 11. Segment 1 dark-brown with posterior margin light yellow. Segment 2: area anterior to the transverse carina brown, with



Figs 9-12. Female abdominal colour pattern. (9, 11): *Aeshna tinti*, ♀ paratype (Chile, Antofagasta, Toconao a Volcán Lascar, alt. 2450 m, MNHN), 9: dorsal view, ♀ allotype, – 11: lateral view; – (10, 12): *Aeshna elsia*, ♀ (Perú, La Libertad, Samne, alt. 1500 m, FML), 10: dorsal view, – 12: lateral view. – [Scale bar: 5 mm]

na brown, with a narrow mediolongitudinal light yellow stripe; transverse carina with a light yellow stripe along its anterior margin; area posterior to the transverse carina light blue, with a transverse black spot on each side. Segment 3: AD confluent with AL, MD and PD separated from PD by a wide dark-brown area.

Segments 4-7: AD absent, MD and PD separated by a black stripe. Segment 7 as 6, except for the confluence of MD and PD. Segment 8: PD and small MD separated by a wide black area. Segment 9: MD absent. Segment 10 yellow with anterior and posterior margins black and a black mediolongitudinal stripe.

Dorsal spots of segments 3-9 light yellow. – Lateral colour pattern as in Figure 11. Segment 1 dark brown with posterior margin light yellow. Segment 2: anterior area light yellow, posterior light blue, with a reddish-brown ventral stripe, a dorsal brown area anterior to the transverse carina and a transverse black spot posterior to it. Segment 3: area anterior to the transverse carina occupied by AL. ML and PL confluent with each other and with MD and PD respectively. Segments 4-7: AL in the ventral 0.50 of the area anterior to the transverse carina. ML and PL confluent with MD and PD respectively, but not with each other. Segment 8: PL confluent with PD, ML and MD separated. PL in 0.50 of the height of the segment. Segment 9 black, with very small rounded ML, separated from PL. Segment 10: dorsal 0.50 yellow, basal 0.50 pale-brown. Lateral spots of segments 3-9 light yellow. Contours of ventral terga, delimited by the inner and outer lateroventral longitudinal carinae and the posteroventral transverse carinae, as shown in Figure 14. Reddish-brown with yellowish reniform spot at anterior 0.80. – Cerci (Fig. 19) lanceolate, tips rounded. Maximum width between basal and distal 0.30.

VARIATION (paratypes). – Similar to holotype and allotype except for the following features: transverse stem of “T” width as in Figure 1 or as wide as longitudinal stem. Arrangement of pterothoracic small yellow or light blue spots in males: basal mesepimeral, basal and distal metepimeral spots (11.75%); basal mesepimeral and distal metepimeral spots (23.5%); basal mesepimeral and basal metepimeral spots (5.9%); basal mesepimeral spot (5.9%); distal metepimeral spot (14.7%); without light spots (38.25%); in females: basal and medial mesepimeral, basal metepimeral spots (5.2%); basal mesepimeral and distal metepimeral spots (21.1%); basal mesepimeral and basal metepimeral spots (5.2%); basal mesepimeral and distal spots (5.2%); basal mesepimeral spot (42.2%); without light spots (21.1%).

Ventral terga: pattern of light blue or yellowish spots: Kidney-shaped spot at anterior 0.80 (32.1%); at anterior 0.50 (32.1%); at anterior 0.30 (7.55%); anterior and posterior spots (3.75%); without light spots (24.5%). Abdominal colour pattern variable in segment 8 lateral view: in males, PL confluent or not with PD; in females, PL extends from 0.50 to 1.00 of the lateral surface of the segment.

DISTRIBUTION (Fig. 23). – **T y p e l o c a l i t y:** CHILE, Antofagasta, El Loa, Tilopozo, 23°49'S 68°15'W.

CHILE: Tarapacá region: Iquique province: Mamiña, 20°05'S 69°14'W, 2800 m (IEUM); Quebrada de Guatacondo, 20°55'S 69°07'W (MNHN). Antofagasta region: Tocopilla province: Quillagua, 21°38'S 69°34'W (MNHN). El Loa province: Riberas del río Loa (MNHN); Linzor, 22°13'S 68°01'W, 4200 m (IEUM; MLP); Río Salado (IEUM); Chiuchiu, 22°22'S 68°38' W (MLP; MNHN); Calama, 22°27'S 68°55'W, 2400 m (IEUM; MLP); Vilama, little valley 5 km NE of San Pedro de Atacama (UMMZ); San Pedro de Atacama, 22°55'S 68°12'W, 2436 m (IEUM; MLP; RWG; UMMZ); Tambillo, 21°26'S 69°13'W (UMMZ); Quito (IEUM); Toconao, 23°12'S 68°02'W, 2400 m (MLP; MNHN; RWG; UMMZ); Toconao a Volcán Lascar, 2450 m (MNHN); Pocos, creek approx. 10 km from Talabre, 3000 m (UMMZ); Peine, 23°40'S 68°07' W, 2350 m (IEUM); Tilopozo, 23°49'S 68°15'W (MLP). Antofagasta province: Antofagasta, 23°38'S 70°24'W (MNHN); Aguas Blancas, 24°09'S 69°38'W (IEUM).

AESHNA ELSIA CALVERT, 1952

Figures 3-4, 6, 8, 10, 12, 15-16, 20-23; Tables I, II

Aeshna (Neureclipta) elsia: CALVERT, 1952: 260-262 (descr., type locality: vicinity of Pacasmayo, Peru); – CALVERT, 1956: 14, 134-137, pl. 16, figs 234-235, tabs 2, 4, 8, 11, 13, 17, map 6 (key, fig. holotype ♂, allotype ♀, paratypes ♂♂ and ♀♀: ♂ cerci and epiproct, penis, distal segment of penis, ♂ genital fossa, ventral view; ♂ and ♀ abdominal segments 2 and 6, ♀ abdominal segments 1-2, ♀ abdominal segments 9-10, ♂ frons, ♂ and ♀ pterothorax); – RÁCENIS, 1959: 494 (listed from Perú, repeated Calvert sites); – PAULSON, 1977: 175 (listed from Chile); – DAVIES & TOBIN, 1984: 3 (listed from South America); – JURZITZA, 1989: 9 (listed from Chile, repeated Calvert sites).

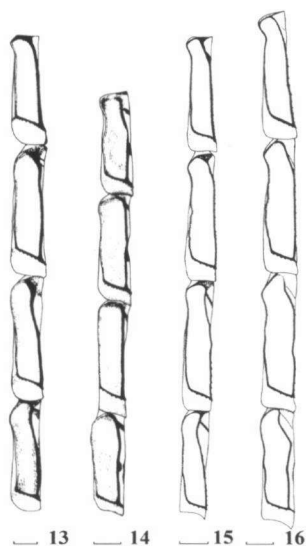
M a t e r i a l. – 1 ♂ **paratype**: Perú, Lima dept., vicinity of Villa, 120 m, F. Woytkowski leg., 15-III-1936 (UMMZ); 1 ♀ Perú, La Libertad dept., Samne, 1500 m, 17-V-1975, Stange & Porter leg. (FML); 1 ♀ Perú, Lima dept., Lima, 10-II-1955 (FML); same data except for 1 ♂, V-1951, Weyrauch leg. (FML); same data except for 1 ♀, 20-XII-1959 (FML); 1 ♀ Chile, Tarapacá, Arica prov., Poconchile, valley of Lluta river, 18°26'S 70°05'W, 580 m, L.E. Peña leg., 12-X-1952 (UMMZ); 1 ♂ Chile, Tarapacá, Arica prov., Azapa, 16-XI-1955, R. Warht leg. (MNHN); same data except for 1 ♂, Soza leg. (IEUM); 1 ♀ Chile, Tarapacá, Arica prov., Pampa de Chaca, 18°43'S 70°10'W, L.E. Peña leg., 5/8-XI-1955 (UMMZ); 2 ♂, 1 ♀ Chile, Tarapacá, Arica prov., Camarones, 19°00'S 69°47'W, L.E. Peña leg., 27/30-XI-1952 (UMMZ); same data except for 1 ♂, 1 ♀ (MLP).

REDESCRIPTION. – **H e a d.** – Labrum yellow; ventral and dorsal margins black; clypeus yellow or light blue; distal margin of clypeal lobes rounded; frontoclypeal groove lacking black stripe (Fig. 4). Vertical portion of antefrons yellow or light blue. Horizontal portion of antefrons yellow or light blue, with “T” spot complete and with a rounded greyish or bluish spot on each side of longitudinal stem of “T”. Longitudinal stem of “T” wider at its base, gradually narrowing at distal 0.30 (Fig. 1). Postfrons yellow with lateral and posterior margins black; black stripe along ocular groove, widening towards frontoclypeal groove; vertex yellow.

T h o r a x. – Pronotum black except white margins; posterior margin of posterior lobe bearing a fringe of long white hairs. Pterothorax: Reddish-brown, with (16.6%) or without mesanepisternal spots at basal 0.20; mesepimeral and metepimeral stripes variable as follows: – **MALES:** Mesepimeral and metepimeral stripes complete (20%); mesepimeral stripe at basal 0.80 of mesepimeron, metepimeral stripe complete (20%); basal and distal mesepimeral spots, metepimeral stripe complete (20%); basal and distal mesepimeral, basal and distal metepimeral spots (20%); basal mesepimeral, basal and distal metepimeral spots (20%). – **FEMALES:** Mesepimeral and metepimeral stripes complete (14.35%); mesepimeral stripe at basal 0.80 of mesepimeron, metepimeral stripe complete (42.8%); with mesepimeral and metepimeral stripes at basal 0.80 of mesepimeron and metepimeron (14.35%); mesepimeral stripe at basal 0.80 of mesepimeron, basal metepimeral spot (28.5%).

Legs as in *A. tinti*.

Wings: for venation features see Table II. Mem-branule black, white at basal



Figs 13-16. Abdomen, ventral view of left half of segments 4-7. (13, 14): *Aeshna tinti*, 13: ♂ holotype, - 14: ♀ allotype; - (15, 16): *Aeshna elsia*, 15: ♂ paratype, - 16: ♀ Chile, Tarapacá, Arica, Poconchile, valley of Lluta river, 18°26'S 70°5'W, alt. 580 m, UMMZ. - [Scale bar: 1 mm]

0.20 (40% males) or 0.40 (females and 60% males); pterostigma with ventral surface yellow, dorsal surface black (80% males) or yellow (females and 20% males); veins black, except yellow C, antenodals and subnodal crossveins.

A b d o m e n. - Male dorsal colour pattern as in Figure 6. - Segment 1 dark brown. Segment 2: area anterior to transverse carina brown, with a narrow mediolongitudinal light blue stripe and a transverse light blue stripe along its anterior margin, area posterior to transverse carina light blue with a transverse black spot on each side. Segments 3-4: AL confluent, forming a small triangular spot and separated from AL, MD and PD separated by wide dark-brown area. Segments 5-8: AD absent, MD smaller than PD in segments 5 and 8, as large as PD in segment 6 and larger than PD in segment 7, always separated from it by a dark-brown area of variable width. Segment 9: MD absent, PD at 0.50 of the segment length. Segment 10 light blue with anterior 0.30 and posterior margin black. Dorsal spots light blue (in well preserved specimens). - Male lateral colour pattern (Fig. 8). - Segment 1 dark brown with posterior margin light blue. Segment 2 light blue with reddish-brown ventral band, a brown dorsal

area anterior to transverse carina and a black transverse spot posterior to it. Segment 3: AL extending over area anterior to transverse carina, ML separated from MD by a narrow dark-brown stripe, PL confluent or not with PD. Segments 4-7 as in segment 3 except for the smaller AL and the confluence of PL with PD. Segment 8 as in 7 except AL absent. Segment 9: ML absent, PL and PD confluent. Segment 10 light blue with black anterior and posterior margins. Lateral spots (in well-preserved specimens) light blue. - Female dorsal colour pattern (Fig. 10). - Segment 1 dark brown. Segment 2: area anterior to transverse carina brown, with narrow mediolongitudinal light blue stripe and transverse light blue stripe along its anterior margin, area posterior to the transverse carina light blue with transverse black spot on each side. Segment 3 with AD forming a small triangular spot, separated from AL, MD and PD separated by wide reddish-brown area, PD bordered by black stripe. Segments 4-5 as 3 except AD absent. Segments 6-7 as 4 except that each black stripe bordering PD divided into two small rounded spots. Segment 8 black, with PD and small MD. Segment 9: MD absent. Segment 10 yellow with black anterior and posterior margins. Dorsal spots

Table II
Venation features of *Aeshna tinti* and *A. elsia*
[In square brackets: range, in brackets: value of highest frequency]

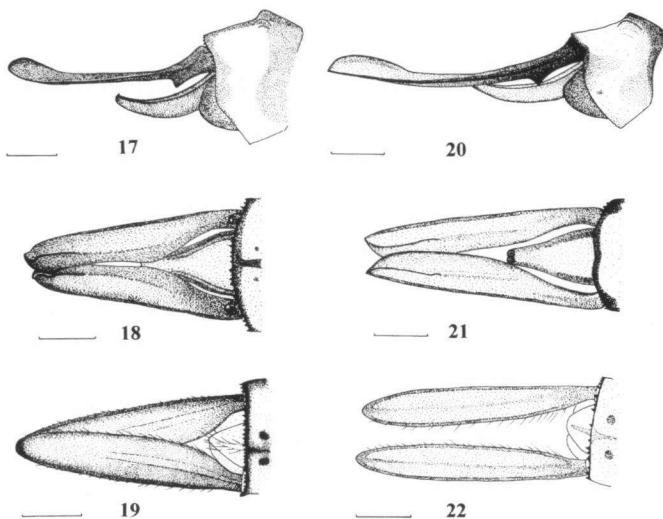
Characters		<i>Aeshna tinti</i>		<i>Aeshna elsia</i>	
		♂ N=34	♀ N=19	♂ N=5	♀ N=7
Antenodals	FW	[12-16] (13)	[11-15] (13)	[11-15] (12)	[11-13] (11)
	HW	[8-10] (9)	[8-10] (9)	[8-10] (8)	[8-9] (8)
Triangle cells	FW	[3-4] (4)	[2-4] (4)	[2-3] (3)	[3-4] (3)
	HW	[3-4] (4)	[3-4] (4)	[3-4] (3)	[2-3] (3)
Supratriangle crossveins	FW	[1-3] (2)	[1-2] (2)	[0]	[0-1] (0)
	HW	[1-2] (1)	[1-2] (1)	[0]	[0]
Cubital crossveins	FW	[4-6] (5)	[5-6] (5)	[4-5] (4)	[4-6] (4)
	HW	[4-6] (5)	[5-6] (5)	[3-4] (4)	[3-4] (4)
Cell rows between IR2a-IR2b at pterostigma level	FW	[2-3] (3)	[2-3] (3)	[3]	[3]
	HW	[2-3] (3)	[2-3] (3)	[3]	[3]
Bridge crossveins	FW	[2-4] (3)	[1-3] (2)	[2-3] (2)	[2-3] (2)
	HW	[2-3] (2)	[2-3] (2)	[2-3] (2)	[2-3] (2)
Cells anal loop	HW	[6-12] (9)	[7-11] (9)	[5-8] (7)	[5-8] (8)
Cell rows anal loop	HW	[2-3] (3)	[2-3] (3)	[2-3] (2)	[2-3] (2)

of segments 3-9 light blue or light yellow. – Female lateral colour pattern (Fig. 12). – Segment 1 dark-brown dorsally, reddish-brown ventrally, posterior margin light yellow. Segment 2 light blue with a reddish-brown ventral stripe, a dorsal brown area anterior to transverse carina and a transverse black spot posterior to it. Segments 3-4: AL and ML absent, PL and PD confluent. Segments 5-7: AL and ML present at ventral 0.50 of segment, ML and PL confluent with MD and PL respectively. Segments 8-9: ML absent, PL confluent with PD. Segment 10 pale-brown or light yellow with anterior margin black. Lateral spots of segments 3-9 light blue or light yellow. Male and female contour of ventral terga, delimited by inner and outer lateroventral longitudinal carinae and posteroventral transverse carinae, as shown in Figures 15-16, reddish-brown with a variable pattern of light blue or yellowish spots as follows: reniform spot at anterior 0.80 (25%); at anterior 0.50 (16.6%); at anterior 0.30 (8.4%); without light spots (50%). Cerci: male (Figs 20-21) in dorsal view widening gradually from basal 0.30 to maximum width at distal 0.30, internal margin slightly convex at distal 0.60 (Fig. 21); sub-basal tooth well developed, longitudinal dorsal crest well developed at distal 0.20 to 0.40 (Fig. 20). Female (Fig. 22) cercus lanceolate, with angulated tips. Maximum width between 0.40 and 0.70 of its length.

Measurements. – See Table I.

DISTRIBUTION (Fig. 23). – Type locality: vicinity of Pacasmayo, Peru, F. Woytkowski leg., 20-V-1936 (No. 2222, UMMZ).

PERÚ: La Libertad department: vicinity of Pacasmayo (CALVERT, 1952, 1956); Samne, 1500 m



Figs 17-22. Terminalia. (17-19): *Aeshna tinti*, 17: ♂ holotype, lateral view, – 18: ♂ holotype, dorsal view, – 19: ♀ allotype, dorsal view; – (20-22): *Aeshna elsia*, 20: ♂ paratype, lateral view, – 21: ♂ holotype, dorsal view, – 22: ♀ Perú, Lima, 10-II-1955, FML, dorsal view. – [Scale bar: 1 mm]

(FML). Huanuco department: Pachitea (CALVERT, 1956). Lima departament: vicinity of Villa, 120 m (UMMZ; CALVERT, 1952, 1956); Repartición, 140 m (CALVERT, 1952, 1956); vicinity of Chosica, 990 m (CALVERT, 1952, 1956); Lima (FML; CALVERT, 1956). – CHILE: Tarapacá region: Arica province: Poconchile, valley of Lluta river, 18°26'S 70°5'W, 580 m (UMMZ); Azapa (IEUM; MNHN; CALVERT, 1952, 1956); Pampa de Chaca, 18°43'S 70°10'W (UMMZ); Camarones, 19°0'S 69°47'W (MLP; UMMZ). Iquique province: Miñimiñi (CALVERT, 1952, 1956). Maule region: Curicó province: Curico (CALVERT, 1952, 1956). Talca province: Talca (CALVERT, 1952, 1956).

DISCUSSION

Aeshna tinti is apparently restricted to the arid northern area of Chile where it is sympatric with *A. elsia*, *A. variegata* Fabricius, 1775 and *A. brevifrons* Hagen, 1865. *A. elsia* extends southwards along the western slope of the Andes to Curicó and Tacna in Central Chile. Thus, both species are endemic of the Andean biogeographic region (MORRONE, 1999) with *A. tinti* thus far known only from the Atacama and Arid Puna biogeographic provinces and *A. elsia* from Maule, Atacama, Desierto, Central Puna and Humid Puna provinces. RODRIGUES CAPÍTULO et al. (1991) and RODRIGUES CAPÍTULO (1992) recorded *A. elsia* from Buenos Aires and Río Negro provinces, Argentina. MUZÓN (1995) and MUZÓN & VON ELLENRIEDER (1998) listed these records but doubted their authenticity. Examination of specimens determined as *A. elsia* (deposited at MLP) shows them to be *A. absoluta*. I believe the specimen included by CAL-

VERT (1952) from Patagonia from which he mentioned the presence of a wide black stripe along the frontoclypeal groove was similarly misidentified.

Besides of the subgeneric difference of crossed supratrangles, *Aeshna tinti* is easily distinguished from *A. elsia* by the angulated clypeal lobes (rounded in *A. elsia*, Figs 2, 4), the ratio length/width of male abdominal segment 4 (Tab. I) and the shape of male and female ventral terga (Figs 13-14). The tips of female cerci are rounded in *A. tinti* and angulated in *A. elsia* (Figs 19, 22), the position of maximum width of male cerci is at basal 0.30, compared to distal 0.30 in *A. elsia*, and their internal margin at distal 0.60 is slightly concave, while convex in *A. elsia* (Figs 18, 21). Both species differ in details of abdominal colour pattern: in *A. tinti* males MD and PD spots are confluent in segments 5-8, and ML and PL spots are separated in segments 5-7; in *A. elsia* MD and PD are separated and ML and PL are confluent on segments 4-8 (Figs 5-8). In segment 3 in *A. tinti* females there is a wide pale lateral area on each side and a wide black dorsolongitudinal stripe anterior to the transverse carina; in *A. elsia* absent and very narrow respectively (Figs 9-12). Both species are easily distinguished from *A. (Marmaraeschna) brevifrons* by the marbled thoracic colour pattern of the latter,

characteristic of the subgenus.

A. tinti can be distinguished from *A. variegata*, the other sympatric *Hesperaeschna*, by the thoracic colour pattern (pale mesepisternal and mesepimeral stripes always present in *A. variegata*, and represented only by their ends in *A. tinti*), the abdominal colour pattern (confluence of MD and PD in segments 7-8 in *A. tinti*, separated in *A. variegata*) and its smaller size (mean body length around 50 mm in *A. tinti*, 60 mm in *A. variegata*; male and female mean cerci length around 4 mm in *A. tinti*, 5 mm in *A. variegata*). *Aeshna elsia* differs from the other inland *Neureclipta* species by its rounded clypeal lobes (VON ELLENRIEDER, 1999).

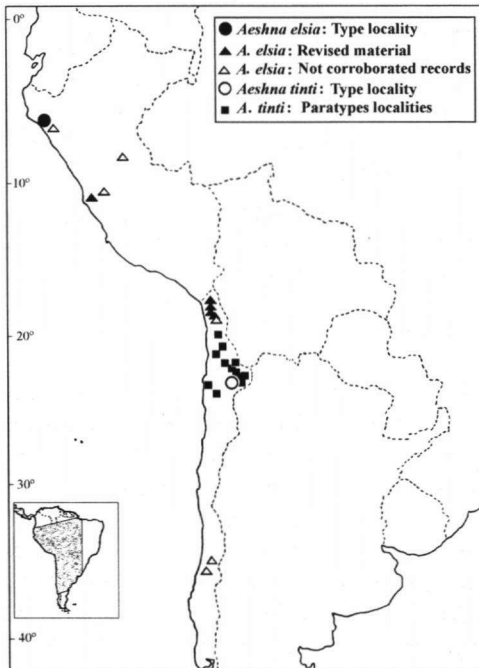


Fig. 23. Map showing localities (occasionally several clustered) of *Aeshna tinti* and *A. elsia*.

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