

**Taxonomic notes on Trochidae (Mollusca, Prosobranchia):
two new species of Jujubinus from the Canary Islands**

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INTRODUCTION

The genus *Jujubinus* Monterosato, 1884 (Prosobranchia, Trochidae) is wide-spread along the coasts of Europe and North Africa, from Norway to Senegal. Within this large area, a number of highly variable and phenotypically scarcely distinguished species are found. According to various authors their number ranges from 7 (Ghisotti & Melone, 1975) to 22 (Nordsieck, 1982). As a matter of fact, most species present clinal distributions and many populations have been given unnecessary names. However, quite a few interesting forms are known, of which the taxonomic position is still debated. These exist in either ecologically or geographically isolated areas, sometimes with extremely limited ranges (Curini-Galletti & Palazzi, 1979, 1982).

The genus *Jujubinus* displays some features which promote speciation in isolated areas: (a) there are no pelagic larvae; (b) the adults show limited movement; (c) most species are bathymetrically limited to the infralittoral zone. In recent years attention has been drawn to the mechanisms of speciation in this genus (Curini-Galletti & Palazzi, 1979, Curini-Galletti, 1982a). In order to study some particular aspects involved in the colonization of local environments, the area known as Macaronesia (which includes the Canary Islands, the Azores, and Madeira and satellites) seemed particularly suitable. Most of these islands date from the end of the Mesozoic (see Nordsieck & Garcia-Talavera, 1979, for the origins of the Canary Islands and Madeira). They are separated from continental West-Africa by waters deeper than 2000 m. In order to settle these islands, species of the genus *Jujubinus* had to depend on accidental events, such as being transported on drifting objects. As a result, the gene-flow between continental and insular populations will be minimal. Therefore, accidental colonization may result in populations which are genetically different from the stem species due to genetic drift and natural selection in the new environment. Furthermore, the Atlantic archipelagoes harbour fewer species of Trochidae (most of which have niches similar to those of *Jujubinus* species) than southern Europe and continental West Africa (personal observations). This enables *Jujubinus* to expand its niche, a further element which allows rapid speciation.

Research on the Canary Islands (mostly on Lanzarote) had resulted in the recognition of three well-known, wide-spread, Euro-Lusitanic species, viz. *J. exasperatus* (Pennant, 1777), *J. striatus* (Linné, 1758), and *J. gravinae* (Monterosato, 1878), some of which with peculiar phenotypes. In addition, two new species were found, which seems to correspond fairly well to the expected high degree of endemism in the Archipelago. Descriptions and discussions of these new species and of their presumably phylogenetical connections with other *Jujubinus* species are the aim of this report.

Jujubinus poppei n. sp. (figs. 1-4, 12)

Description of the holotype. — The shell is solid, opaque and relatively small (height 3.4 mm), and markedly circoconoidal in outline (α : 85°; β : 50°) (see Curini-Galletti & Palazzi, 1980). The protoconch is eroded (as in most of the specimens). Approximately five teleoconch whorls are recognizable; the initial ones are a little tumid in shape, separated by slightly incised sutures. The sculpture consists of seven smooth spiral ridges, subequal to the furrows, which are crossed by numerous, very fine, markedly prosocline growth lines. A smooth peripheral ridge is clearly larger and more marked than the spirals. The body-whorl is wide (73.5% of the total height) and obtusely keeled at the periphery. The base is convex and exhibits six concentric ridges that are slightly smaller than the furrows. An ill-defined umbilical chink is present. The aperture is prosocline, subcircular and opaque. The columella is nearly vertical and exhibits a low swelling near its lower third.

The background colour is brown, whereas the spirals and the adapical and peripheral ridges are darker. White blotches are arranged in irregular, longitudinal bands across the whorls. Peripheral and basal ridges have white dots. The pericolumellar area is white.

Examination of the paratypes completes the description. The protoconch is white, smooth, flattened and with about 1.5 whorls. Younger specimens usually have more incised sutures and consequently more tumid whorls, which are more regularly conoidal in shape (paratype C: h, 2.7 mm; α , 86°; β , 52° / paratype F: h, 3.0 mm; α , 85°; β , 62° / paratype B: h, 2.8 mm; α , 86°; β , 62°). Full-grown specimens, with 6-7 whorls, are more markedly circoconoidal, having flat whorls and linear sutures (paratype G: h, 4.8 mm; α , 82°; β , 40° / paratype H: h, 4.3 mm; α , 83°; β , 45° / paratype I: h, 4.4 mm; α , 83°; β , 45°). The colour pattern varies with the arrangement of the white blotches, which may occur only on spiral ridges (paratype C) or produce regular longitudinal bands (paratype I). The largest specimen reaches 4.8 mm in length (paratype G).

Radula. — Formula oo:5:1:5:oo (47). Marginals fine, slender, simply hooked. Laterals regularly increasing in size from the centre of the radula towards the edge; outer laterals large, with the ectocones more prominent than the endocones; inner laterals more finely and regularly denticulate. The cusp of the first (inner) lateral and that of the rachidian tooth are comparable in size. The rachidian tooth is short, almost as high as wide (fig. 12).

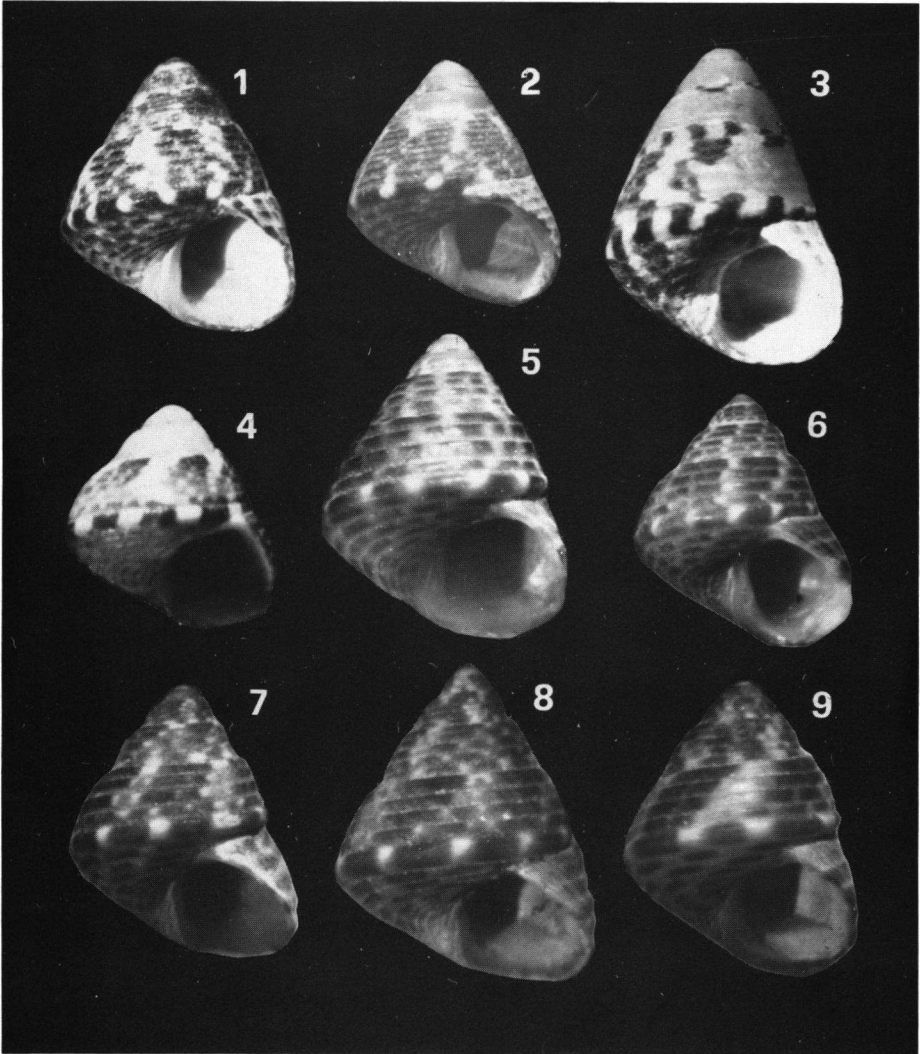
Holotype. — USNM 784712. Paratypes: USNM 784713 (paratype I); KBIN 387-26439 (paratypes A and H).¹ The remaining paratypes are in the collections of G. T. Poppe and of the author.

Type-locality. — Specimens were found among shell debris collected from sand flats at low depths (3-5 m) in the harbour of Arrecife, Lanzarote (28°57' N, 13°32' W). More than 100 specimens have been examined, only one of which contained remains of the soft parts and radula.

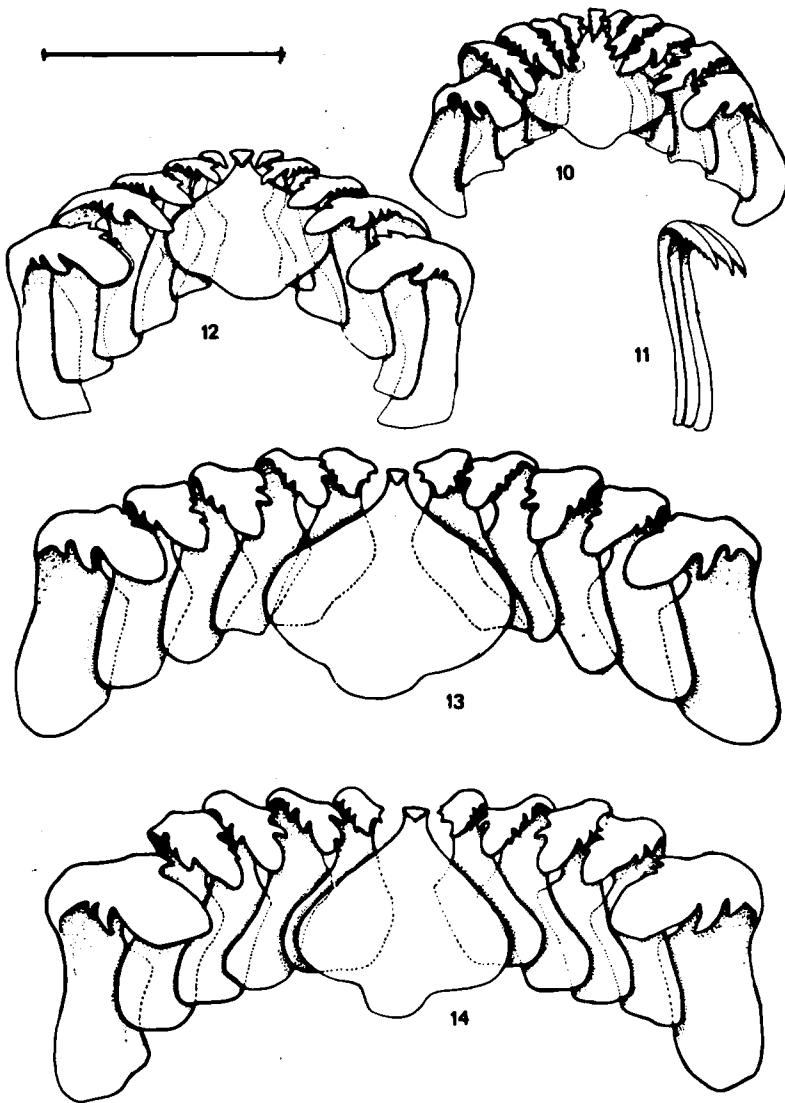
Origin of the name. — The species is named after G. T. Poppe (Mortsel, Belgium), who collected most of the specimens and kindly sent them to me for identification.

Discussion. — The new species shows most of the synapomorphic characters of the *J. montagu* species group, i.e. circoconoidal shape, presence of a slight umbilical chink

¹ Abbreviations: KBIN = Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels, Belgium; USNM = National Museum of Natural History, Smithsonian Institution, Washington D.C., U.S.A.



Figs. 1-9. *Jujubinus poppei* n. sp. (1, $\times 10.5$; 2, 4, $\times 9.7$; 3, $\times 9$). 1, holotype; 2, paratype A; 3, paratype I; 4, paratype B. 5-9. *Jujubinus guanchus* n. sp. ($\times 9$). 5, holotype; 6, paratype I; 7, paratype D; 8, paratype C; 9, paratype E.



Figs. 10-14. Details of radulae of *Jujubinus* spec. (scale bar 50 μ m). 10, 11, *J. guanchus* n. sp., rachis and lateral teeth, and (11) three marginal teeth, respectively; 12, *J. poppei* n. sp., rachis and lateral teeth; 13, *J. montagui*, rachis and lateral teeth; 14, *J. ruscurianus*, rachis and lateral teeth.

which progressively disappears in adults, radular features (such as the shape of lateral and rachidian teeth) and high $n(r)/L$ ratio (table 2). Besides *J. montagui* (Wood, 1826), a widespread species, the other living species of the group are *J. tumidulus* (Aradas, 1846), *J. ruscurianus* (Weinkauff, 1868) and *J. dispar* Curini-Galletti, 1982. It is worth noting that most of the fossil species of the genus belong to this group.

J. montagui and *J. tumidulus* are closely related to each other. Both differ from the new species by the degree of development of their growth lines, which are much coarser, more prominent and cutting across the spiral ridges at least on the uppermost whorls. Moreover, *J. montagui* attains a larger size; it also has a different $h(bw)/h(t)$ ratio (table 1) and a lower $L/h(t)$ ratio (table 2), whereas (based on the radulas examined) the cusp of the first (inner) lateral is much larger than that of the rachidian tooth. Recent and fossil specimens of *J. tumidulus* have much more tumid whorls, more incised sutures, a thinner peripheral ridge and a less rounded aperture. The apex and the postembryonal whorls are more flattened. Finally, *J. montagui* and *J. tumidulus* have a different colour pattern, as they are cream with brown mottling. They also live in deeper water (Curini-Galletti & Palazzi, 1982; Fretter & Graham, 1977; Ghisotti & Melone, 1975).

Species	Locality	N	h	h(max)	h(bw)/h(t)	h(t)/D	n
<i>J. poppei</i>	Lanzarote (CI)	100	3.53 ± 0.50	4.8	0.73 ± 0.02	1.23 ± 0.08	6.64 ± 0.54
<i>J. guanchus</i>	Lanzarote (CI)	100	3.45 ± 0.58	5.2	0.74 ± 0.04	1.12 ± 0.08	4.08 ± 0.29
<i>J. montagui</i>	Elba Is. (It)	37	5.14 ± 1.09	8.3	0.62 ± 0.02	1.32 ± 0.05	5.05 ± 0.23
<i>J. dispar</i>	Algeciras (Sp)	50	5.78 ± 1.11	8.0	0.72 ± 0.03	1.11 ± 0.08	6.04 ± 0.65
<i>J. tumidulus</i>	Ponte dei Muti (It)	18	4.51 ± 0.40	5.3	0.71 ± 0.03	1.29 ± 0.07	7.67 ± 0.05
<i>J. tumidulus</i>	Messina (It)	55	3.64 ± 0.67	4.3	0.75 ± 0.04	1.28 ± 0.07	6.42 ± 0.63
<i>J. ruscurianus</i>	Algers (Al)	13	4.63 ± 0.46	5.4	0.73 ± 0.05	1.25 ± 0.16	4.92 ± 0.67
<i>J. ruscurianus</i>	Algeciras (Sp)	100	5.73 ± 0.72	7.5	0.66 ± 0.03	1.30 ± 0.07	5.99 ± 0.47
<i>J. ruscurianus</i>	Fuengirola (Sp)	50	5.01 ± 0.69	6.9	0.65 ± 0.03	1.26 ± 0.09	5.24 ± 0.54
<i>J. ruscurianus</i>	Ceuta (Sp)	15	5.43 ± 1.07	7.5	0.68 ± 0.04	1.37 ± 0.16	6.35 ± 0.68

Table 1. Biometric data on shells of *Jujubinus* spec. (all measurements in mm). Abbreviations: N, number of specimens; h, mean height in the sample; h(max), height of the highest specimen; D, diameter of the shell; h(t), height of the shell; h(bw), height of the body-whorl; n, mean number of spiral ridges on the body-whorl, excluding the peripheral ridge; Al, Algeria; CI, Canary Islands; It, Italy; Sp, Spain; Tu, Tunisia. (see Curini-Galletti & Palazzi, 1982, for measurements of recent and fossil specimens of *J. tumidulus*).

Specimens belonging to *J. dispar* are much larger in size ($p \ll 0.01$ for comparable adult specimens of 6-7 whorls) and differ in shape: the initial whorls are flat and regularly conoidal, while in the younger whorls the sutures become more and more incised, causing a progressive increase of their tumidity. Consequently, the body-whorl is much more convex and obtusely keeled at the periphery than it is in *J. poppei*. When full-grown the base of *J. dispar* is relatively wider and more convex, the peripheral ridge is more marked and the height of the aperture is proportionally greater. *J. dispar* also has a distinctive colour pattern, with white bands on a light (whitish, yellow or pinkish red) background. The species ranges from the Strait of Gibraltar, its type locality (Curini-Galletti, 1982b), to West Africa (Casablanca — one specimen in the

Monterosato collection, Rome, and Mauretania — one specimen in the Dautzenberg collection, KBIN).

J. ruscurianus was a well known species in the 19th century and hundreds of properly labelled specimens can be seen in both the Monterosato and the Dautzenberg collections. Contemporary collectors apparently forgot about this species despite its abundance in the extreme western Mediterranean. *J. ruscurianus* has only recently been re-identified (Curini-Galletti, 1982c; Curini-Galletti & Palazzi, 1980; Nordsieck & Garcia-Talavera, 1979; Pisani-Burnay & Lages, 1983). It is known to show clinal variation along the European and African coasts of the Alboran Sea. Regularly conoidal shells, with a shiny surface because of their slight sculpturing and bright colours, are found in the Strait of Gibraltar. Such specimens are progressively replaced by more cirtoconoidal shells, with a coarser and more incised sculpture and darker colour, as one moves eastward. These last mentioned characters are most prominent at Almeria and Algiers, the easternmost localities where the species is presently known to occur (Curini-Galletti, 1982c; Curini-Galletti & Palazzi, 1980). No specimens of *J. ruscurianus* have been found in samples from the harbour of Lanzarote. According to Nordsieck & Garcia-Talavera (1979), however, the Canary Islands are inhabited by the typical western race, which is larger than *J. poppei* and more regularly conoidal in shape, with a vague sculpture and a polished surface. Their colour is brick-red with golden yellow bands and a red apex. Furthermore, in none of the known populations of *J. ruscurianus* the outline of the shells changes with age, in contrast to what is seen in *J. poppei*. Juvenile specimens of *J. ruscurianus* always have flattened whorls. The radula of this species is most similar to that of *J. montagui* (see also table 2).

Species	Locality	h(t)	L	w	n(r)	1	L/h(t)	n(r)/L
<i>J. exasperatus</i>	Livorno (It)	6.5	2.68	0.35	52	57	0.41	19.4
<i>J. unidentatus</i>	Djerba (Tu)	9.3	3.20	0.26	55	61	0.34	17.2
<i>J. baudoni</i>	Gerona (Sp)	5.2	2.28	0.17	44	48	0.44	19.3
<i>J. ruscurianus</i>	Fuengirola (Sp)	3.7	1.82	0.14	42	38	0.48	23.0
<i>J. ruscurianus</i>	Algiers (Al)	4.2	1.80	0.12	42	41	0.43	23.3
<i>J. guanchus</i>	Lanzarote (CI)	3.2	1.45	0.09	46	35	0.45	31.7
<i>J. guanchus</i>	Lanzarote (CI)	3.9	1.50	0.13	46	34	0.38	30.7
<i>J. guanchus</i>	Lanzarote (CI)	4.8	1.92	0.16	47	40	0.40	24.5
<i>J. guanchus</i>	Lanzarote (CI)	5.2	2.00	0.16	50	45	0.38	25.0
<i>J. poppei</i>	Lanzarote (CI)	3.5	1.49	0.10	47	27	0.42	31.5
<i>J. montagui</i>	Elba Is. (It)	5.5	1.68	0.11	40	37	0.30	23.8
<i>J. montagui</i>	Elba Is. (It)	4.5	1.45	0.11	38	28	0.32	26.2
<i>J. striatus</i>	Livorno (It)	10.2	3.5	0.32	44	76	0.34	12.6
<i>J. striatus</i>	Livorno (It)	5.3	2.3	0.20	41	53	0.43	17.8
<i>J. gravinae</i>	Lanzarote (CI)	4.0	1.7	0.13	40	38	0.42	23.5
<i>J. gravinae</i>	Lanzarote (CI)	4.2	1.8	0.13	40	41	0.42	22.2

Table 2. Biometric data on shells and radulae of *Jujubinus* spec. Abbreviations: h(t), height of the shell; L, length of the radula (mm); w, mean width of the rachis between the 20th and the 25th row (mm); n(r), number of rows of the radula; 1, mean distance between the rachidian teeth between the 20th and the 25th row (in μm). Despite the low numbers of specimens examined, some affinities among species groups are recognizable. The *J. exasperatus* complex, which includes *J. unidentatus* (Philippi, 1844) and *J. baudoni* (Martin in Monterosato, 1891), has low n(r)/L values; the value is particularly low in *J. striatus*. Much higher n(r)/L values are found in the *J. montagui* complex and in *J. gravinae*.

J. poppei resembles two fossil species in shape, viz. *J. bucklandi* (Basterot, 1825) and *J. gymnospira* (Cossmann & Peyrot, 1919). In both species, however, the spiral sculpture becomes less prominent from the initial teleoconch whorls on and the body-whorl only has growth lines.

J. poppei has been reported under other names at least three times. Dautzenberg (1891) recorded the species as *J. tumidulus* for the Canary Islands: "La Luz, St.n. 67. Exemplaires identiques à ceux de Palerme qui nous ont été envoyés par M. le Marquis de Monterosato". *J. tumidulus* (Aradas, 1846) was originally described from Pliocene fossil beds of Sicily (Aradas, 1846, 1847; Seguenza, 1873-77. Monterosato (1878a, b) reported the species as still living off northern Sicily. Recently the species has been redescribed and figured, and its recent occurrence in Sicilian and surrounding waters has been confirmed (Curini-Galletti & Palazzi, 1982). In the Dautzenberg collection (KBIN) the specimen from Palermo sent by Monterosato is still present. In the same box, a tube labelled "*Jujubinus tumidulus*, rade de la Lux, 25.1.90" contains five worn and mostly broken shells of *J. poppei*. The poor condition of the small sample has almost obliterated the above mentioned differences between the two species.

Jeffreys (1883) has reported "*Trochus montacuti* var. *nana*" from the Canary Islands and the Gulf of Tunis. A specimen labelled as such, from the Sicilian channel, in the Dautzenberg collection, turned out to belong to *J. tumidulus* (see Curini-Galletti & Palazzi, 1982). The specimens from the Canary Islands cited by Jeffreys might in fact be *J. poppei*. Their superficial resemblance to *J. montagui* (= *J. montacuti*) and allied species might have caused the misidentification. Anyway, *T. montacuti* var. *nana* must be considered a nomen nudum (Warén, 1980).

Nordsieck & Garcia-Talavera (1979) and Nordsieck (1982) have published figures of a specimen from Lanzarote somewhat similar to *J. poppei* as "(?) *Gibbula senegalensis* Menke 1858". This name, however, applies to a very different species, occurring in waters off equatorial West Africa. Its shell is wider than high, with a wide umbilicus in all stages and a different ornamentation (Fischer-Piette, 1942; Fischer-Piette & Nicklès, 1946; Nicklès, 1950; Stearns, 1893 "*Gibbula nassaviensis* Chemnitz").

Other taxa belonging to the genus *Jujubinus* and based on specimens from the Canary Islands have recently been described as new by Nordsieck & Garcia-Talavera (1979). *J. striatus pseudelenchoides* is more than twice as large as *J. poppei* (height 11 mm) and has a rounded body-whorl due to the total lack of peripheral ridges. It is regularly conoidal in shape, with a different colour pattern and its sutures are not incised. *J. smaragdinus obscurus* is regularly conoidal in shape and has flattened whorls and a flattened base; there is a peripheral ridge, that projects beyond the outline of the shell. This form cannot be distinguished from *J. gravinae*.

***Jujubinus guanchus* n. sp. (figs. 5-9, 10, 11)**

Description of the holotype. — The shell is solid, shiny, small for the genus (height 4.5 mm) and markedly cirtoconoidal in shape (α : 80°; β : 51°). The protoconch is eroded. Approximately six tumid teleoconch whorls are separated by incised sutures. The sculpture consists of four smooth, wide and flattened spiral ridges, the abapical being the narrowest. These ridges are separated by much narrower furrows, which are crossed by very fine, procline growth lines. There is a smooth peripheral ridge, that is larger and more prominent than the spirals. The body-whorl is wide (74.2% of the total height of the shell) and obtusely keeled at the periphery. The base is strongly con-

vex and shows seven concentric ridges that are slightly wider than the furrows. The aperture is prosocline, subcircular and intensely nacreous within. The columella is nearly vertical, with a low swelling near its lower third.

The background colour is a shiny olive-green. The spirals are pink with white dots; the basal ridges are more regularly dotted.

Additional details may be obtained from the paratypes. The protoconch is white, smooth, flattened and with about 1.5 whorls. The older teleoconch whorls are regularly convex. Mature specimens have 6-7 whorls. Younger specimens have an umbilical chink, which is progressively closed in adults. The colour includes all shades of shiny green and pink. Some specimens (paratypes A, H, L) are completely pink with white dots. Paratype E is brown with yellow opisthocline bands. The largest specimen reaches 5.2 mm in height.

Radula. — Formula $\infty:5:1:5:\infty$ (46-50). The characters of the radula are virtually identical to those of *J. poppei* (figs. 10, 11).

Holotype. — USNM 784714. Paratypes: USNM 784715 (paratype D); KBIN 388-26439 (paratypes A, C). The remaining paratypes are in the collections of G. T. Poppe and of the author.

Type-locality. — The harbour of Arrecife, Lanzarote, in the same debris in which specimens of *J. poppei* were found. More than 100 specimens have been found, a few with remains of soft parts. Occasional specimens (paratypes) have been found at Tenerife (Los Christianos, Puerto de la Cruz).

Origin of name. — The species is named after the ancient inhabitants of the Canary Islands.

Discussion. — *J. guanchus* n. sp. appears to be one of the most distinctive and unusual species in the genus. It has most of the characters of the *J. montagui* species group, which include cirriconoidal shape, presence of an umbilical chink in juveniles and radular features. However, it has its own apomorphic characters, such as a scalariform outline and rounded whorls.

Both *J. guanchus* and *J. poppei* live in the harbour of Arrecife, and are immediately recognizable by the number of spirals on the body-whorl (fig. 15). Apart from by its apomorphic features, *J. guanchus* differs from *J. montagui* and *J. tumidulus* by the complete absence of any transverse sculpture on the spirals. It differs from *J. dispar* in its smaller size, higher h/D ratio and a reduced number of spirals (fig. 15); the two species also differ in the shape of older whorls (which are convex in *J. guanchus* and flattened in *J. dispar*), and in their colour pattern (see Curini-Galletti, 1982b).

The Canary Islands populations of *J. ruscurianus* have more regularly conoidal shells as compared to *J. guanchus*, and almost flattened whorls (Nordsieck & Garcia-Talavera, 1979). The former species is also larger, with slender shells with inconspicuous sutures and a finer sculpture (fig. 15); its apex is often red and its general colouration is always different (Curini-Galletti & Palazzi, 1980). Furthermore, in the radula the first (inner) lateral is much bigger than the rachidian tooth.

J. guanchus closely resembles three fossil species, viz. (1) *J. subturgidulum* (D'Orbigny, 1852), with a similar number of spirals, which, however, are crossed by growth lines, and inconspicuous sutures, (2) *J. turricula* (Eichwald, 1830), with deeply incised sutures and spirals crossed by growth lines (not unlike *J. montagui*), and (3) *J. pseudoturricula* (Dolfus & Dautzenberg, 1886), with only four spirals and incised sutures, but with a particularly prominent axial sculpture.

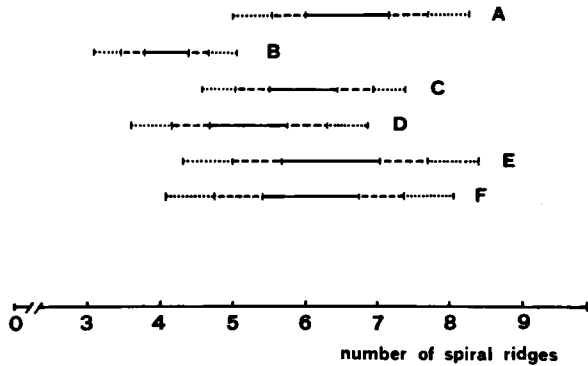


Fig. 15. Standard deviation (sd) of the mean number of spiral ridges on the body-whorl. Straight line: ± 1 sd; dashed line: ± 2 sd; dotted line: ± 3 sd. A and B refer to *J. poppei* and *J. guanchus* from Lanzarote, respectively. The other letters refer to *J. ruscurianus* from Algeciras (C), Fuengirola (D) and Ceuta (E). F refers to *J. dispar* (Algeciras). Size of samples as in table 1. Assuming a normal distribution of data, *J. poppei* and *J. guanchus* are significantly different (99.73%). The divergence of *J. guanchus* and *J. ruscurianus* from Algeciras and Ceuta is high (95.45%), while a lower level of significance is obtained with Fuengirola (68.27%). The three populations of *J. ruscurianus* are not statistically different from each other. In addition they are not statistically different from those of *J. poppei*. *J. dispar* only appears to be statistically different (95.45%) from *J. guanchus*.

It is rather surprising that such an unusual species has not been described earlier. However, the existence of unidentified small Trochidae in the Canary Islands has been underlined more than once (see MacAndrew, 1852). Furthermore, Nordsieck (1982) and Nordsieck & Garcia-Talavera (1979) have published a drawing of a rather similar shell from Lanzarote as *J. (Strigosella) strigosus* Gmelin, 1891. *Trochus strigosus* Gmelin, 1791, actually represents a southern race of *Gibbula umbilicalis* (Linné, 1758) (Fischer-Piette et al., 1962; Piani, 1977). This form is regularly and acutely conoidal in shape, it is larger (up to 20 mm in height), and has quite flattened whorls and base. It also has a sharp keel on the body-whorl and a deep and wide umbilicus in all growth stages. Finally the colour pattern is entirely different (see Fretter & Graham, 1977).

CONCLUSIONS

The occurrence of two new species in a comparatively well known area such as the Canary Islands is not surprising since the taxonomy of the genus *Jujubinus* is still highly controversial and also many small species of the central Mediterranean have been overlooked until recently (Curini-Galletti, 1982a; Curini-Galletti & Palazzi, 1980, 1982).

The new species *J. poppei* and *J. guanchus* can be reasonably considered the results of allopatric speciation; the most closely related (sister?) species might be *J. dispar* and/or *J. ruscurianus*, which are both widespread along the coasts of NW. Africa. This could perhaps be substantiated if further research confirms their endemism to the Canary Islands.

Whether the two new species descended from a common stem species by divergent evolution on different islands or by independent settling in the archipelago is still an unsolved question. The typical specimens of *J. ruscurianus* reported by Nordsieck & Garcia-Talavera (1979) for Lanzarote could result from a later invasion after the earlier speciation processes (if this species is really linked to one or both of the new species).

In any case, it is expected that extensive studies on the systematics and distribution of *Jujubinus* in the Atlantic Islands will lead to a better understanding of the biogeography and the evolution of the group.

SUMMARY

The author describes two new species of marine molluscs (Gastropoda, Prosobranchia, Trochidae), *Jujubinus poppei* n. sp. and *J. guanchus* n. sp., both living on the coasts of the Canary Islands. *J. poppei* differs from other species in the *J. montagui* complex, to which it belongs, by its shape, colour and details of sculpture. *J. guanchus* shares some characters with the *J. montagui* complex, but shows several striking apomorphic features including a rounded body whorl and a reduced number of spirals. The possible phylogenetic relationships of the new species are discussed.

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