

the modifying effects of a strange environment in Agiguan! Whether any acceptable foreign environment or combination of foreign environments can influence, through a number of generations, the formation of a population of individuals with strikingly different feeding habits, is problematical, but certainly it is not impossible. Nor would change of feeding habits constitute a reversal of evolution, for herbivorousness and carnivorousness are merely the extremes of a flexible scale of omnivorousness on which there is every possible intergradation. It is the nature and affinities of the individuals of the residual population which will determine the relative success of the proposed experiment—and no one can contemplate these.

Finally, there is a very great chance that if *Gonaxis* can become established, it will eventually settle down in a semblance of endemism, doing little good or little harm save possibly the extinction here and there of a localized endemic snail for which it has developed an especial appetite. Conversely, there is a slim chance that it will make considerable and permanent inroads in the populations of the introduced helicines; and it is on this that the authorities concerned are pinning their hopes. With the odds and penalties so great, it is questionable, in the present seriously inadequate state of our knowledge that the decision to introduce *Gonaxis kibweziensis* into continental United States and in the islands of the Pacific is a wise one at this time. But in an adjudged emergency, with its unfortunate concomitant "pressures," any measure that holds even the faintest promise of success, irrespective of so-called "minor side effects," is considered by many to be worth trying. As one has said, "When crops are at stake, one cannot afford to be a conservationist." But there is also an old adage, "The remedy is worse than the disease."

NEW AND LITTLE-KNOWN MEXICAN HELICIDAE (MOLLUSCA, PULMONATA)

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During the author's tenure as Jessup Fellow at the Academy of Natural Sciences of Philadelphia from June through August

1955, preliminary studies were made towards a revision of the Mexican Helicidae. Since completion of the study will be delayed, the figuring of two previously unfigured species, description of a new *Humboldtiana* and addition of several locality records to the range of *H. durangoensis* Solem seem worthwhile.

I am indebted to Dr. Harald A. Rehder of the United States National Museum (USNM) for the loan of type material, to the Jessup Fund Committee of the Academy of Natural Sciences (ANSP) for their financial support and to Dr. Henry A. Pilsbry for his invaluable advice.

HUMBOLDTIANA QUERETAROANA Dall

Pl. 3, figs. 4, 5, 6

(see Nautilus **11** (7): 73)

The unique holotype (USNM 134691) from 8000–9500' at Pinal de Amoles, Queretaro, Mexico, is a high-spined, bandless shell of the same degree of granulosity as *humboldtiana* Pfeiffer, *nuevoleonis* Pilsbry, *buffoniana* Pfeiffer and *taylori* Drake (see PILSBRY 1927: pl. 13, figs. 2–3). It differs from all of these in its higher spire, lack of color bands and prominent white axial streaks. The sculpture, umbilicus and apertural callus are nearest to *buffoniana* Pfeiffer and further collecting may show that *queretaroana* is only a high-spined, bandless subspecies of *buffoniana*. The less depressed apex mentioned by Dall may have been the result of an injury, since the shell has a slight break just below the embryonic whorls. The high spire is more characteristic of the *durangoensis* complex, but the lack of color bands, much heavier sculpture, smaller nuclear whorls and less deeply impressed sutures ally *queretaroana* to the *humboldtiana* series.

HUMBOLDTIANA DURANGOENSIS Solem

(see Nautilus **68** (1): 4–6, pl. 1, figs. 2, 6)

Apparently *H. durangoensis* is the common species of the Sierra Madre Occidental from the drainage basin of the Rio Mezquital near Durango city, north to the Rio Mayo in SW. Chihuahua. Specimens from Tepehuanes (105° 42', 25° 22') (USNM 198517), El Bonete (105° 55', 24° 55') SW. of Santiago Papasquiaro at 8000' (ANSP 164047) and at 9000' on the trail from

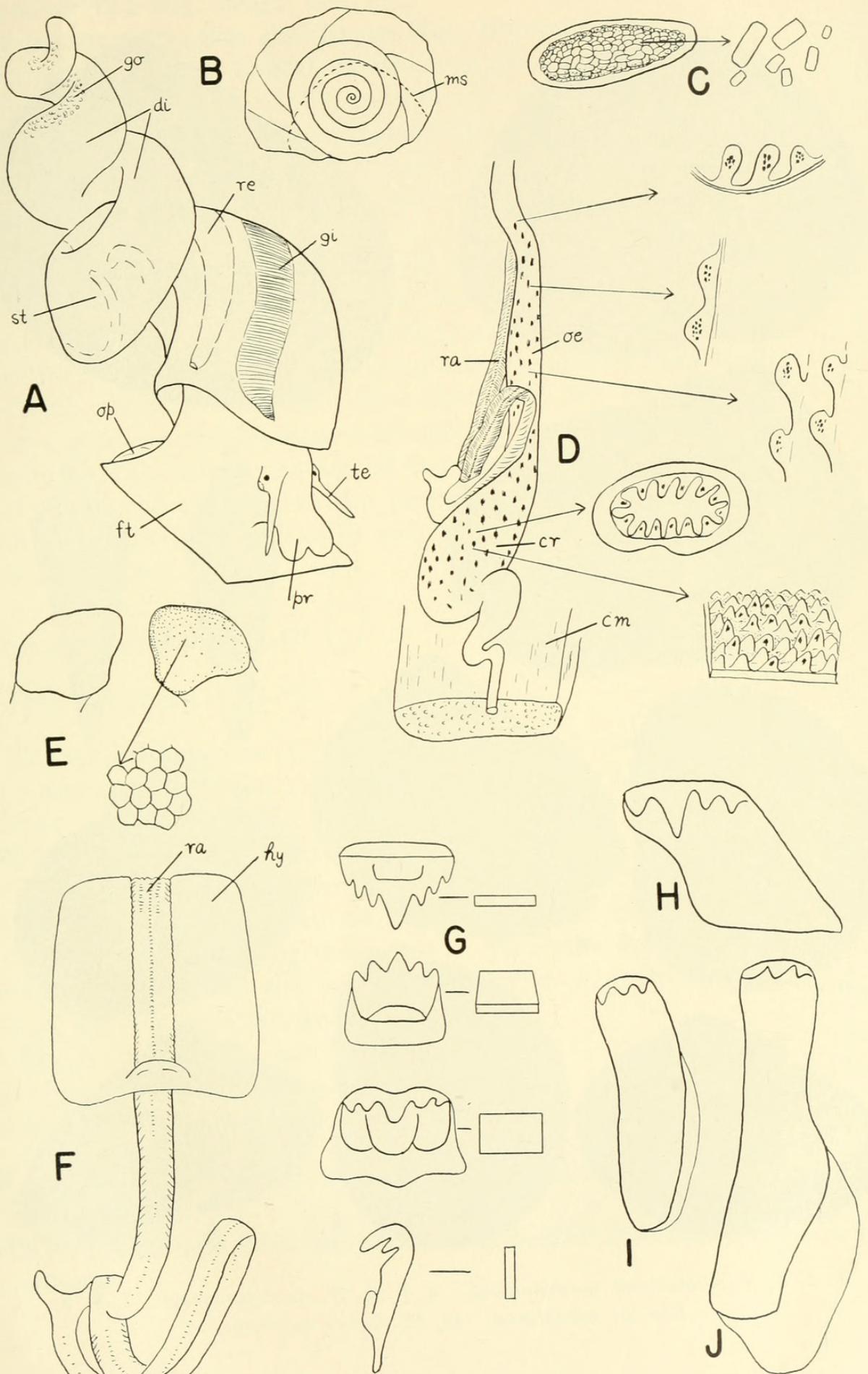
the town of Pueblo Nuevo ($105^{\circ} 24'$, $23^{\circ} 24'$) to the Metates lumber camp, Durango (ANSP 164053), give additional locality records near the northern edge of the Rio Mezquital drainage. The actual basin of the Rio Mezquital is inhabited by an undescribed *Humboldtiana* which probably extends into Zacatecas and Aguascalientes (ANSP and USNM undescribed specimens). Near Concepcion del Oro in eastern Zacatecas, another species, *H. chrysogona* Pilsbry is found (ANSP 164055 and ANSP 164067). In SW Chihuahua, shells from Lareto (ANSP 188914) and the Sierra Saguaribo (ANSP 195108) on the Rio Mayo are juvenile, but not conchologically separable from the southern Durangan shells. Adult specimens from 65 mi. E. of Batopilas (approx. $106^{\circ} 40'$, $26^{\circ} 35'$) near the Rio Verde (USNM 251794) also seem to be *durangoensis*. The exact boundary between *durangoensis* and the *högeana* group remains uncertain, but will probably be found in southern or central Chihuahua.

The numerous fine granulations, dull color, large nuclear whorls and many white color streaks easily separate *durangoensis* from the *humboldtiana* series. The specimens from El Bonete are quite large, the largest individual being 45.9 mm. in diameter, 41.1 mm. high with $4\frac{3}{8}$ whorls.

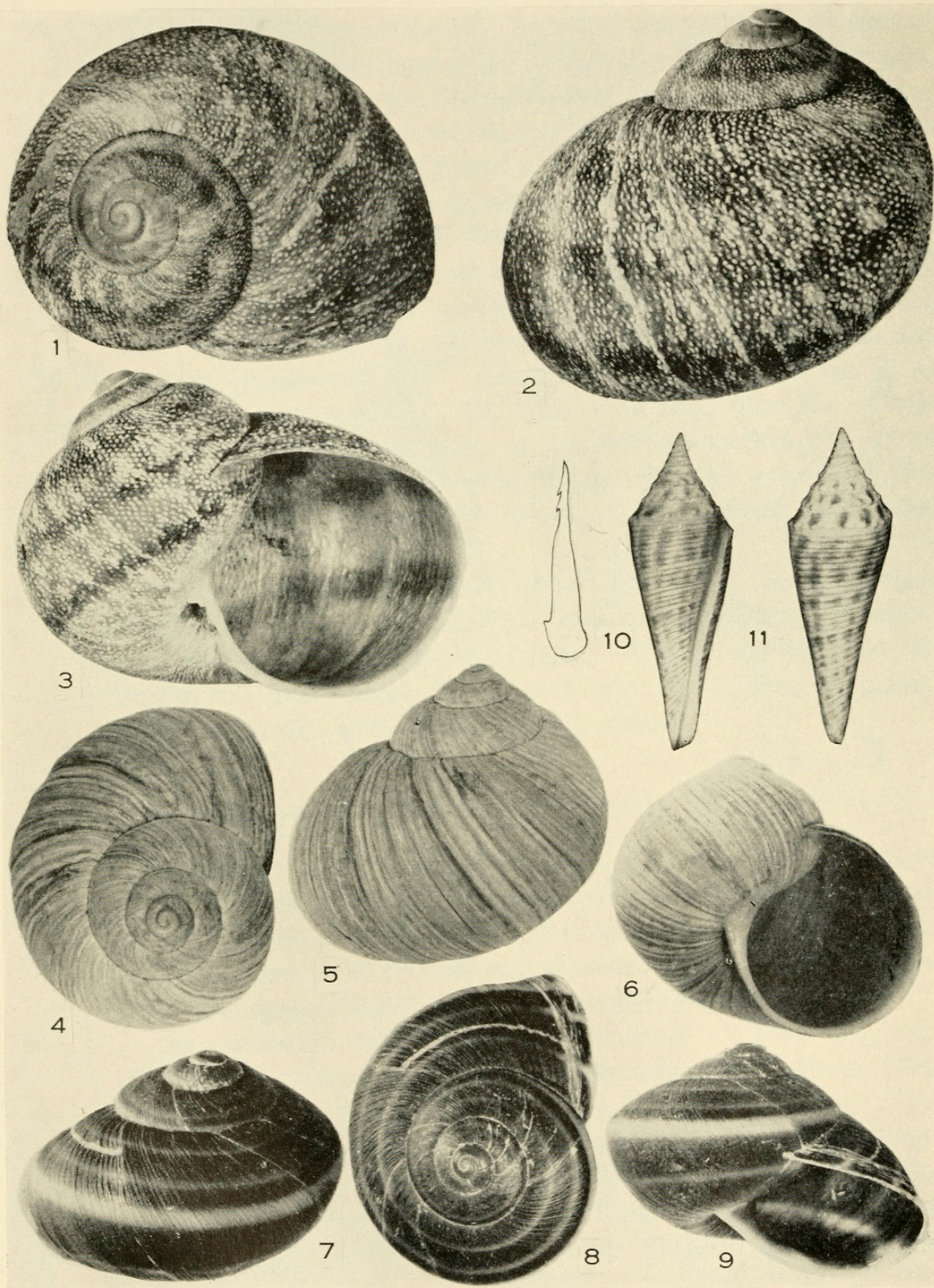
HUMBOLDTIANA PERGRANULOSA, new species Pl. 3, figs. 1, 2, 3

DIAGNOSIS: A *Humboldtiana* the size, shape and coloration of the *humboldtiana* Pfeiffer series, but allied to *durangoensis* by its impressed sutures, large nuclear whorls and umbilicus. It differs from both groups, and all other *Humboldtiana*, in the very large granulations, hence the name *pergranulosa*.

DESCRIPTION: Shell large, solid, helicoid. Whorls $4\frac{1}{4}$, rapidly increasing in size with moderately impressed sutures. Nuclear whorls $1\frac{1}{2}$, large, smooth, with a brown band below. Next whorl worn, with only a few minute granulations. Penultimate and body whorl with very large (0.05–0.75 mm.), numerous white granulations. Ground color light chestnut, with three reddish-brown spiral bands, the upper slightly wider than the lower two. Aperture ovate, parietal callus almost absent. Lip broken, but basal and columellar portions are slightly reflected.



Doryssa hohenackeri form kappleri.



1, 2, 3, *Humboldtiana pergranulosa*. 4, 5, 6, *H. queretaroensis*. 7, 8, 9, *Lysinoe sebastiana*. 10, 11, *Conus mcgintyi*.



Solem, Alan. 1955. "New and little known Mexican Helicidae." *The Nautilus* 69, 40–44.

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