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THE SEVY DOLOMITE OF NEVADA

Invertebrate Paleontology
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PROBABLE LUDLOVIAN BRACHIOPODS FROM THE SEVY DOLOMITE OF NEVADA

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ABSTRACT—A thick section of Sevy Dolomite in the Pahrana-gat Range of southeastern Nevada has yielded a small fauna of brachiopods from a horizon approximately 90 feet above the base of the formation. Eleven species are described and illustrated and three of these are new: *Gypidula? biloba*, *Ferganella? lincolnensis*, and *Atrypella carinata*. The assemblage from the Pahrana-gat Range finds its closest faunal affinities with forms from southeastern Alaska, from Podolia, and from the Ural Mountains of the USSR. In these areas, deposits with similar brachiopods are of Late Silurian (Ludlow) and earliest Devonian (Skala) age. The reported occurrences of *Halysites*, however, favor a Ludlovian assignment for lower Sevy rocks.

The underlying Laketown Dolomite has yielded fossils from a horizon previously reported on by Waite (1956). One diagnostic species, *Protathyris hesperalis*, is reassigned to *Hyattidina* and Waite's suggested correlation with the Borszczów beds of Podolia is abandoned because the fauna from the overlying Sevy beds is of pre-Borszczów age.

INTRODUCTION

THE widespread Sevy Dolomite of western Utah and eastern Nevada has proved nearly barren of recoverable fossils in the past. Its age has been estimated to range from Silurian to Middle Devonian based on lithostratigraphic considerations. In the course of detailed stratigraphic investigations in the Pahrana-gat Range in southeastern Nevada, Reso discovered and collected a small brachiopod fauna from a horizon approximately 90 feet above the base of the very thick section of Sevy Dolomite exposed there. Because the maximum thickness of 1578 feet of Sevy Dolomite is attained in the Pahrana-gat Range (Reso, 1962, p. 251) the age determined by the fossils described and illustrated in this paper probably represents nearly a maximum for the formation and taken in conjunction with Johnson's correlations of the higher Lower Devonian zones (1962b) effectively delimits the age relations of the Sevy. In the course of his field studies, Reso has also collected fossils from the upper member of the Laketown Dolomite (text-fig. 1) at horizons equivalent to the one from which Waite (1956) previously described several brachiopod species.

In the preparation of this paper Reso was responsible for the identification of the stratigraphic position of the various rock units from which fossils were recovered and for their collection. Johnson has prepared the sections on systematic paleontology and correlation of the brachiopod faunas.

We wish to thank Dr. W. A. Oliver, Jr. of the U. S. Geological Survey for identification of corals from the Laketown Dolomite, and Mr.

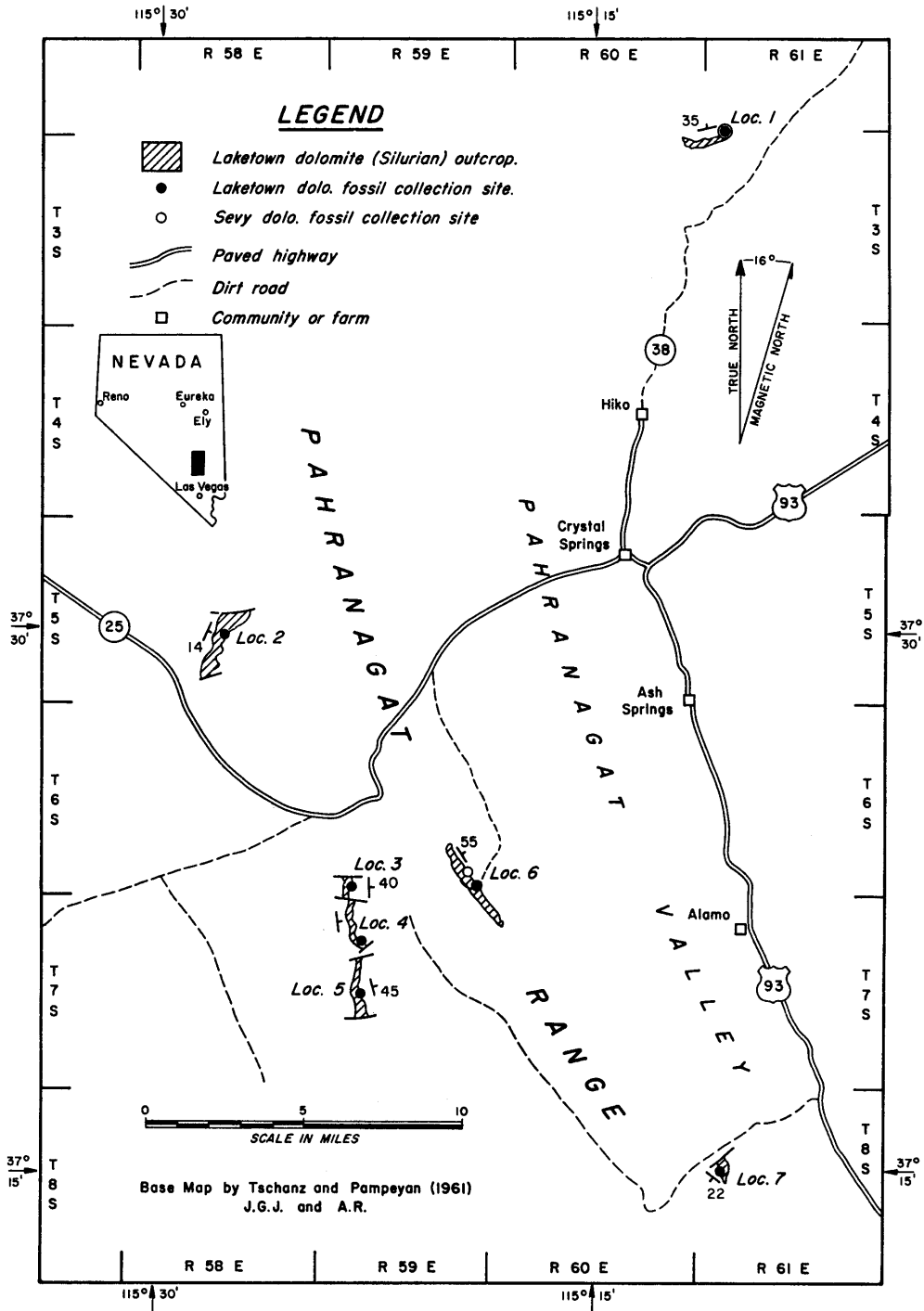
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Takeo Susuki, Department of Geology, UCLA, for photographing the fossil specimens. Our work was also greatly facilitated by loan of fossils from the U. S. National Museum through the courtesy of Dr. G. A. Cooper and from the Museum of Paleontology, University of California, Berkeley through the cooperation of Joseph H. Peck. In addition we are indebted to Professor A. J. Boucot of the California Institute of Technology for critically reading the manuscript and for discussions with Johnson dealing with some of the problems of correlation and systematics of Siluro-Devonian brachiopods. The conclusions presented here, however, are entirely the responsibility of the writers.

STRATIGRAPHY LAKETOWN DOLOMITE

Correlation.—New collections from six localities within the upper member of the Laketown Dolomite, together with the discovery of the basal Sevy fauna reported here necessitates a re-evaluation of the age of the upper Laketown previously discussed by Waite (1956). The Laketown collections yield no forms that are significant for precise age assignment. The transfer of "*Protathyris*" *hesperalis* Waite to *Hyattidina* removes most of the paleontologic evidence for a Ludlow age of the upper Laketown in the Pahrana-gat Range, but from regional considerations the Ludlovian assignment still appears to be the most plausible.

The second Laketown locality reported by Waite (1956, p. 15) at Kings Canyon, Millard County, Utah yields a different fauna of uncertain age. Waite reported *Mesodouvillina geniculata*, *Howellella pauciplicata* and *Camarotoechia pahrana-gatensis* from the Kings Canyon locality.



TEXT-FIG. 1—Index map showing fossil collection sites in the Laketown and Sevy Dolomites, Pahranaगत Range, Nevada.

TABLE 1—FOSSILS FROM THE UPPER LAKETOWN DOLOMITE IN THE PAHRANAGAT RANGE*

Fossil	L2-31	L2-32	L3-27/28	L5-16	L5-17	L6-15
<i>Halysites</i> sp.						X
<i>Favosites</i> sp.						X
<i>Breviphyllum?</i> sp.						X
<i>Disphyllum?</i> sp.	X					X
<i>Clavidictyon</i> sp.						X
" <i>Cladopora</i> " sp.						X
indet. dalmanellid spp.			X	X		X
<i>Atrypa</i> spp.		?	X			X
<i>Howellella</i> cf. <i>nucula</i> (Barrande)			X			X
<i>Howellella</i> sp.						X
<i>Hyattidina hesperalis</i> (Waite)			X	X	?	?
<i>Camarotoechia pahrnagatensis</i> Waite		X	X		X	
indet. rhynchonellid sp. A.			X		X	
indet. rhynchonellid sp. B.						X

* Corals identified by W. A. Oliver, Jr., U. S. Geological Survey.

The first two named forms were neither reported from the Pahrnagat Range Laketown by Waite, nor were they found by the writers. *Camarotoechia pahrnagatensis* however, is a common form at the localities on the west side of the Pahrnagat Range. Waite's collections were borrowed from the Museum of Paleontology, University of California, Berkeley. Examination did not reveal any rhynchonellids in the Utah collection (B-1408) and a letter to Mr. Waite failed to reveal the whereabouts of the reported specimens. Of the other two Utah brachiopods,

Howellella pauciplicata is found in the Sevy of Nevada rather than in the Laketown, which suggests that the Utah Laketown of Waite may be younger than the Laketown in the Pahrnagat Range. However, in the opinion of the writers, if the reported occurrence of *C. pahrnagatensis* can be reaffirmed at the Utah locality, Waite's original correlation should stand because *H. pauciplicata* may be widely distributed stratigraphically.

Examination of table 1 and text-figure 1 reveals that the upper Laketown coral-bearing

EXPLANATION OF PLATE 19

All figures $\times 2$

- FIGS. 1-3—*Gypidula? biloba* Johnson n. sp., holotype (UCLA 35048) pedicle, brachial, and lateral views.
 4—*G? biloba* Johnson n. sp., paratype (UCLA 35049) anterior view.
 5-8—*Ferganella? lincolnensis* Johnson n. sp., holotype (UCLA 35050) pedicle, brachial, anterior and lateral views.
 9—*F? lincolnensis* Johnson n. sp., paratype (UCLA 35051) posterior view.
 10—*F? lincolnensis* Johnson n. sp., paratype (UCLA 35052) pedicle view.
 11—*F? lincolnensis* Johnson n. sp., paratype (UCLA 35053) brachial view.
 12—*F? cf. lincolnensis* Johnson n. sp., paratype (UCLA 35054) brachial view.
 13—*Camarotoechia? cf. reesidei* Kirk & Amsden (UCLA 35059) pedicle view.
 14,19—*Camarotoechia? reesidei* Kirk & Amsden (UCLA 35058) posterior and brachial views.
 15—*C? reesidei* Kirk & Amsden (UCLA 35056) pedicle view.
 16,17—*C? reesidei* Kirk & Amsden (UCLA 35055) brachial and posterior views.
 18—*C? reesidei* Kirk & Amsden (UCLA 35057) pedicle view.
 20,21—*Atrypa* sp. (UCLA 35060) pedicle and brachial views.
 22,23—*Hyattidina hesperalis* (Waite) (UCLA 35075) brachial and pedicle views of internal mold.
 25,26—*H. hesperalis* (Waite) (UCLA 35077) pedicle and brachial views of internal mold.
 27,28—*H. hesperalis* (Waite) (UCLA 35076) pedicle and posterior views (apparent sulcation due to breakage).
 24,29—*Nucleospira hecetensis* Kirk & Amsden? (UCLA 35074) pedicle and anterior views of internal mold.

