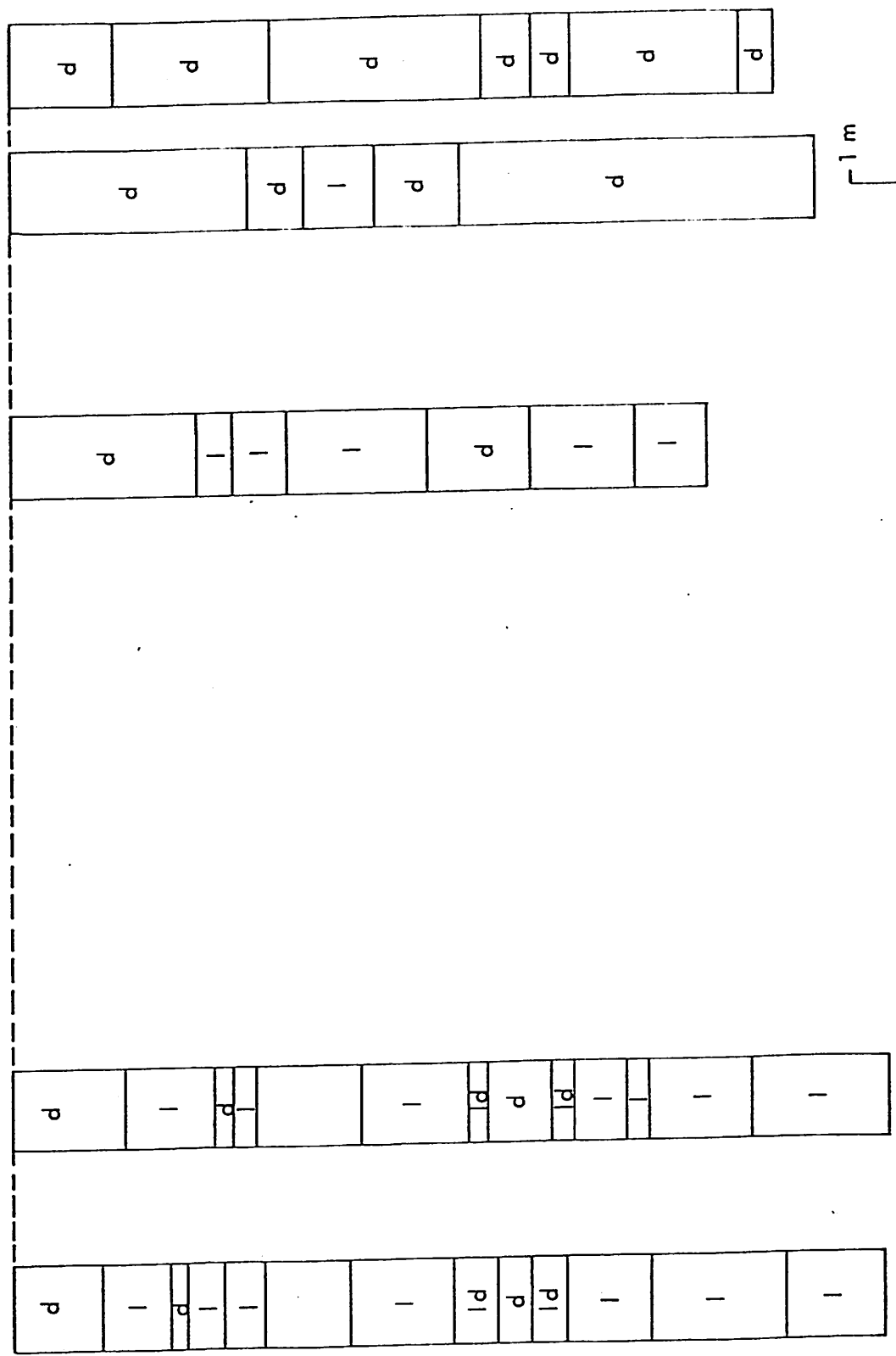


UNIT 5 STRINGOCEPHALUS ZONE



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PALEOZOIC SECTION IN THE NOPAH AND RESTING SPRINGS
MOUNTAINS, INYO COUNTY, CALIFORNIA

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ABSTRACT

The Nopah and Resting Springs Mountains are located within the Furnace Creek and Avawatz Mountains quadrangles in southeastern Inyo County, California, approximately 40 miles east of the south end of Death Valley.

Eighteen formations of pre-Tertiary age have been recognized within the area. Of these, two are pre-Cambrian and sixteen are Paleozoic. The 22,875 feet of Paleozoic rocks are subdivided as follows: four formations of Lower Cambrian age totaling 9,676 feet, three Middle Cambrian formations 5,182 feet thick; one Upper Cambrian unit 1,740 feet thick, three Ordovician formations totaling 2,440 feet; one formation of Devonian age 890 feet in thickness; two Mississippian units the combined thickness of which is 2,167 feet; and one Pennsylvanian formation having a minimum thickness of 780 feet.

The Paleozoic section as summarized above is a composite of nine partial sections which were chosen in the field to show a reasonable overlap between stratigraphically adjacent portions. At no place in either the Nopah or Resting Springs Range is the complete Paleozoic section continuously exposed.

The Lower Cambrian rocks are especially notable for their great thickness and predominantly clastic nature. From the bottom up this series includes the following formations: (1) Noonday dolomite, 1,500 feet thick, (2) Johnnie (?) formations (quartzite, sandstone, shale, and dolomite), 2,550 feet thick, (3) Stirling quartzite, 2,593 feet in thickness and (4) Wood Canyon formation (quartzite, sandstone, greenish gray shales, and limestone), 3,033 feet in thickness. The names of the above enumerated formations, with the exception of the basal unit, are those which have been given to formational units of comparable character and age in the nearby Spring Mountains.

The lowest subdivision of the Middle Cambrian series is the Cadiz formation, 692 feet in thickness. This unit is predominantly clastic in nature and thus stands in marked contrast to the overlying Bonanza King and Cornfield Springs formations, 1,515, and 2,975 feet thick, respectively, which are made up almost exclusively of dolomite and dolomitic limestone. The three Middle Cambrian

formations can be correlated on the basis of lithology and fauna with units of the same names in the region of the Goodsprings and Providence Mountains.

The Nopah formation, assigned to the Upper Cambrian is 1,740 feet in thickness. Except for the basal 100 feet which contains some clastic material, this unit is made up entirely of dolomite.

The rocks assigned to the Ordovician system include units ranging in age from Lower to Upper Ordovician. The lowest formation, termed the Pogonip (?) dolomite, comprises 1,040 feet of dolomite, in part sandy, clayey, and buff-weathering. Overlying these beds is a 265-foot unit of white, vitreous quartzite which is correlated with the Eureka quartzite, a well-known and widely distributed unit of the Ordovician system in the Great Basin region. Above the Eureka quartzite are 800 feet of dolomite which have been correlated tentatively with the Ely Springs dolomite of the Pioche, Nevada, area. Overlying the Ordovician, and present only locally in the northern portion of the Nopah Range, are 335 feet of light gray cherty dolomites which have been assigned tentatively to the Silurian.

The Devonian rocks, unconformably overlying the Silurian and Ordovician, include 890 feet of dolomite and limestone. These beds have been grouped into one formation and correlated tentatively with the Sultan limestone of the Goodsprings, Nevada, region.

Two formations of Mississippian age are recognized. The basal unit, termed the Stewart Valley limestone, is 1,180 feet in thickness. This is overlain unconformably by 987 feet of beds tentatively correlated with the Monte Cristo limestone of the Goodsprings area. The Pennsylvanian beds 780 feet thick, are termed the Bird Springs (?) formation. Neither base nor top of this unit is exposed.

The Nopah-Resting Springs Paleozoic section should prove of value in developing a clear picture of conditions during the Paleozoic in the southern portion of the Great Basin region. Some of the most important features are summarized: (1) the marked thickness of the Lower Cambrian series; (2) the rather peculiar lithology of the Lower Cambrian series which is dolomitic at its base and almost entirely clastic above; (3) the great thickness of the Middle Cambrian rocks; (4) the occurrence of Upper Cambrian beds; (5) the presence of the Eureka quartzite; (6) the well-defined unconformity at the base of the Devonian; (7) the occurrence of the two Mississippian formations separated by an unconformity.