

TYPE LOCALITY DESCRIPTIONS

SAN VICENTE MEMBER OF BOQUILLAS FORMATION (UPPER CRETACEOUS)

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TYPE LOCALITY

LOCATION: Planetable section, 2.4 road mi south of intersection of Panther Junction to Rio Grande Village Park Road 1 and San Vicente Village to Rio Grande Village River Road, and 0.25 mi south of U. S. Geol. Surv. benchmark elevation 1881 ft, starting at the River Road, extending 2240 ft due east, and about 2 mi northeast of the old village of San Vicente, Big Bend National Park, Brewster Co., Texas.

NAMED BY: R. A. Maxwell, J. T. Lonsdale, R. T. Hazzard, and J. A. Wilson, 1967, *Geology of Big Bend National Park*, Brewster Co., Texas: Univ. Texas Bull. n. 6711, p. 64-71.

AGE: Upper Cretaceous, Coniacian-Santonian.

CORRELATED WITH: Lower Austin Group: Atco, Vinson, Jonah units (Durham, 1956).

ORIGINAL DESCRIPTION: (Maxwell, *et al.*, p. 66-68) The Member is mostly 350 to 400 ft thick in Big Bend National Park but locally thins to 130 ft. It is gray, thin-to medium-bedded, chalky and argillaceous limestone flags interbedded with gray or yellowish-gray platy marl, or soft gray marl. Some limestone layers are as much as 12 to 18 in thick, but most beds are only 2 to 6 in thick. The more calcareous rocks weather grayish white, whereas the more marly beds weather bluish gray or yellowish gray. The San Vicente Member contains more and thicker marl intervals and more chalk than the Ernst Member. The basal 20 ft of the San Vicente is commonly silty or sandy flagstone and locally the basal 6 in is finely conglomeratic. According to Adkins, the zone of *Peroniceras* sp. is the lowest Austin faunal zone . . . The amount of flagstone decreases upward, and the top of the member is alternating soft gray marl and chalk. The chalk forms ledges resistant to erosion that frequently stand in low cuestas. A chalky ledge (usually a low cuesta) 15 to 20 ft below the top of the San Vicente contains abundant *Inoceramus undulatopticatus* . . . Above the *Inoceramus undulatopticatus* beds as much as 22 ft of gray marl, slightly indurated, with some flagstone, contain numerous large *Inoceramus* sp. In most localities the San Vicente grades upward into the Pen Formation, but in places the contact is abrupt . . . At the type locality of the San Vicente Member is the . . . meas-

ured section . . . It is 331 ft thick. The basal 6 in is conglomerate that rests upon the *Coilopoceras* beds of the Ernst Member . . . above the conglomerate are about 20 ft of gray, buff, and pinkish siltstone, sandstone, argillaceous limestone, and some bentonitic clay with lignitic concretions. These are overlain by chalk beds 12 to 18 in thick, chalky and argillaceous marl, and soft gray marl. The *Peroniceras* beds are not recognized here.

The *Inoceramus undulatopticatus* beds form a 13-foot ledge whose top is 22 ft below the top of the member. They are nodular, gray chalk interbedded with platy, gray marl. The overlying beds, up to the base of the Pen Formation, are mottled, gray and yellowish brown, finely crystalline limestone interbedded with gray marl which yielded several *Inoceramus* sp. that are partly covered with *Ostrea congesta*.

COLUMN: (Maxwell, *et al.*, 1967, p. 68) See Fig. 1

	Thickness (feet)
Pen Formation	
San Vicente Member (Boquillas Formation)	
13. Limestone, dove-gray, mottled with yellowish-brown streaks, finely crystalline, interbedded with gray marl. Some of the thicker limestone beds contain imprints of large flat <i>Inoceramus</i> sp., covered with <i>Ostrea congesta</i> . Forms backslope of low cuesta and underlies the yellowish-gray Pen Formation	22
12. <i>Inoceramus undulatopticatus</i> beds. Limestone, dove-gray, fine-grained, chalky, in 1-foot beds, interbedded with gray marl in 2-1/2-foot beds. The beds form the crest and upper backslope of the cuesta mentioned above. <i>Inoceramus undulatopticatus</i> is abundant and there are a few <i>Texanites</i> sp. cf. <i>T. texanus</i>	13
11. Chalk, gray, indurated, forming a ledge, with <i>Texanites</i> sp.	1
10. Marl and calcareous clay, dark gray, with small, poorly preserved ammonites and pelecypods	59
9. Limestone and tuff, gray, thin, soft, argillaceous, forming inconspicuous 1-	

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- foot ledges, interbedded with shale and marl. Except for the limestone ledges, most of the interval is covered and forms a broad valley between 2 cuestas..... 80
8. Limestone, chalky and argillaceous, interbedded with marl. At the top is an 18-in chalky, nodular limestone ledge. Similar but thinner beds alternate with calcareous clay and marl in the upper 20 ft. The unit also includes a yellowish bentonitic (?) clay seam 6 in thick. In a 30-foot interval near the middle is flaggy to massive limestone, gray, weathering brown, in 1-foot ledges interbedded with platy, argillaceous limestone. The unit forms a low cuesta and contains ammonite casts and *Inoceramus* sp. The bottom 35 ft is dove-gray, fine-grained, chalky limestone in ledges less than a foot thick, interbedded with platy argillite, forming top of cuesta 85
 7. Chalk, dove-gray, fine-grained, hard, containing molds and casts of ammonites and *Inoceramus* sp. 4
 6. Limestone, dove-gray, chalky, in 2- to 2-1/2-foot ledges interbedded with yellowish gray marl. Most of the chalk is in the upper third of the interval and contains molds of ammonites and *Ino-*

- ceramus* sp. The unit includes the lower slope of the cuesta face above the San Vicente-Ernst contact 46
5. Siltstone, buff, platy, calcereous; most of the plates of above are a fraction of an inch thick. Some beds with thicker plates make a slight ledge..... 4
 4. Limestone, buff, argillaceous..... 1
 3. Sandstone, buff to pinkish, fine grained, platy, in 1/8-inch thick beds that are more silty upward 15
 2. Clay, olive-green to yellow, bentonitic, with a concretionary band of lignite and crusts of gypsum 1
 1. Sandstone and conglomerate, gray to brownish gray 0.5
- Total 331.5

Erosion surface.

Ernst Member (Boquillas Formation)

REFERENCES

Durham, C. O., Jr., 1956, The Austin-Taylor relationship in Central Texas, *in* Resúmenes de los trabajos presentados: XX Cong. Geol. Inter., Mexico City, abs., p. 330.

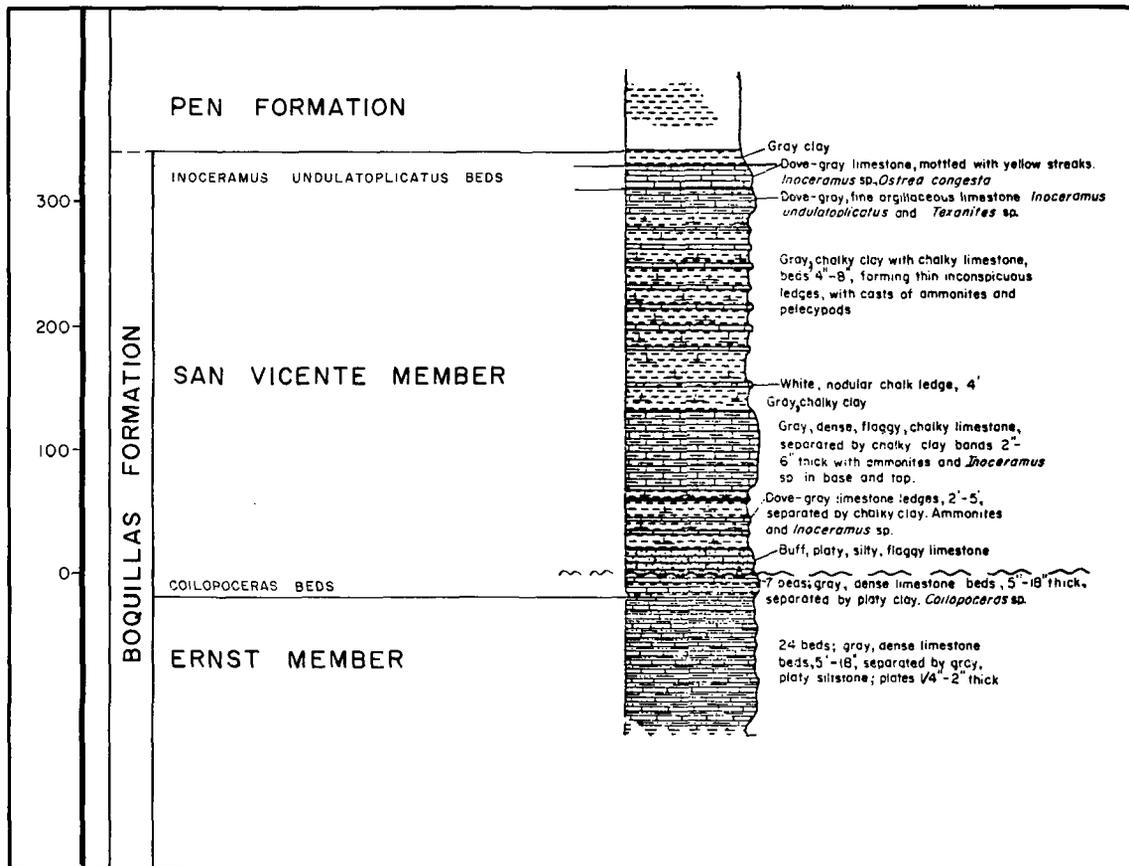


FIG. 1. TYPE LOCALITY COLUMNAR SECTION, SAN VICENTE MEMBER, BOQUILLAS FORMATION, BIG BEND NATIONAL PARK, BREWSTER COUNTY, TEXAS.

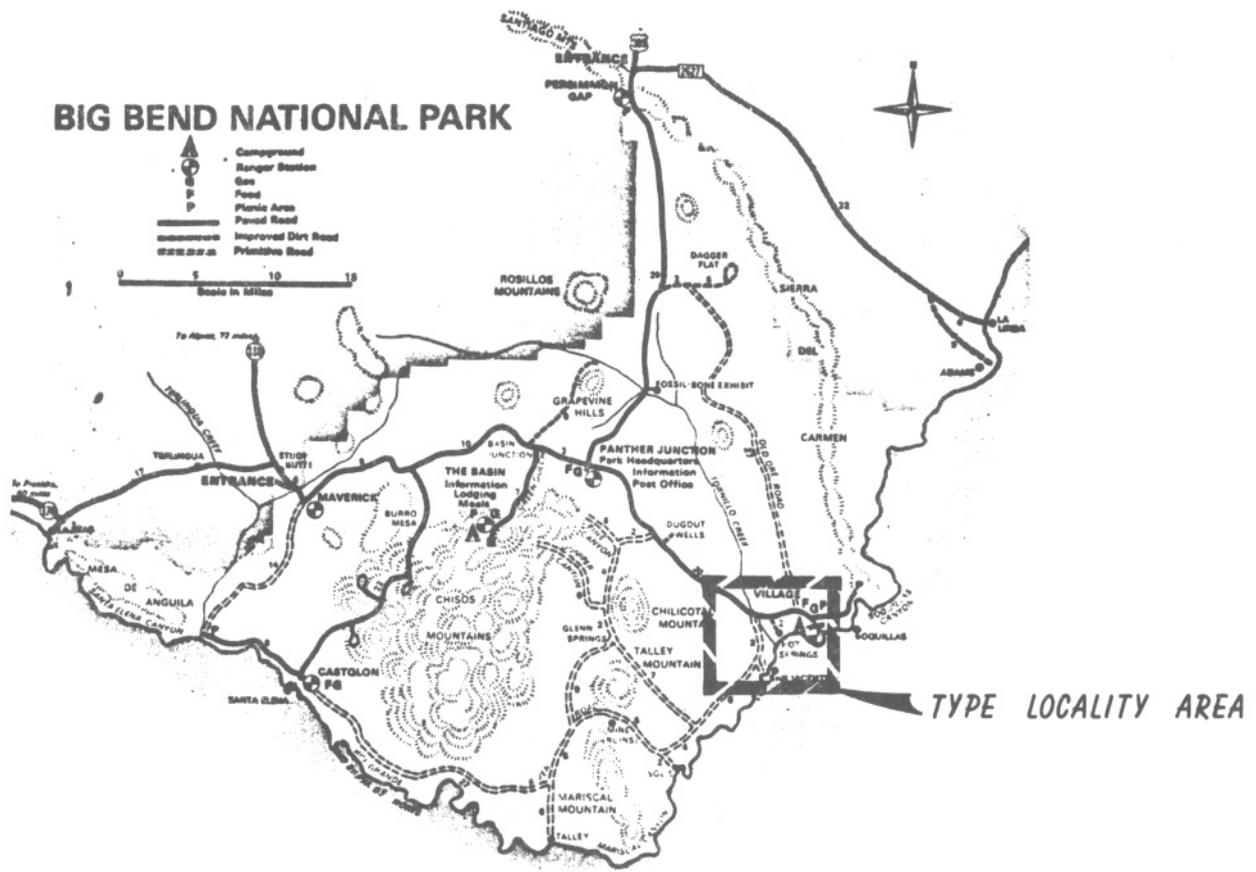
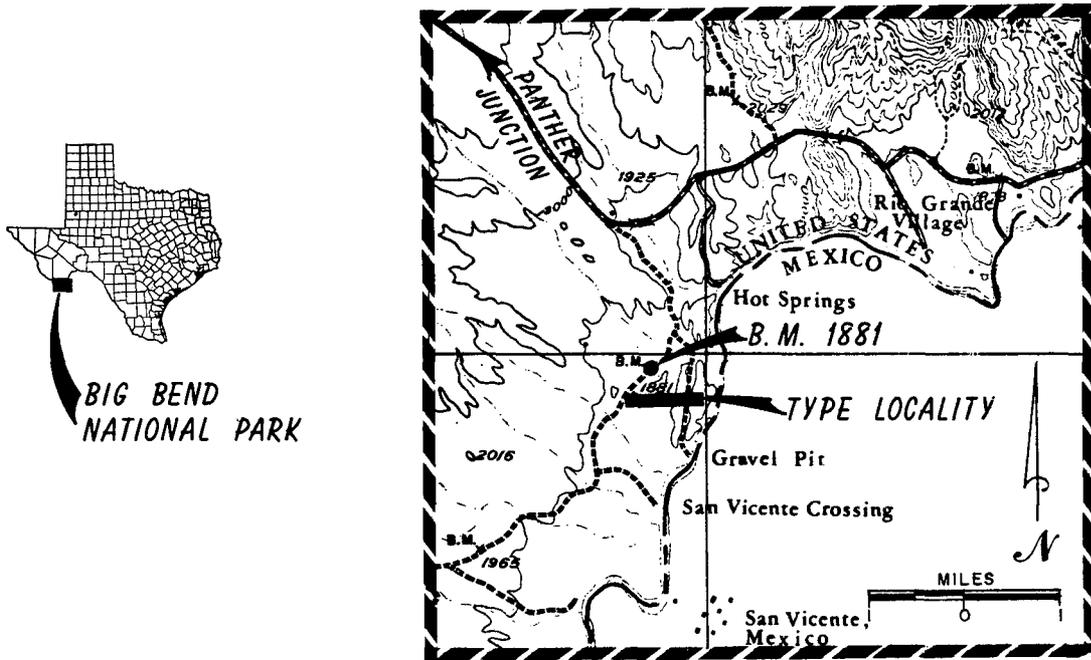


FIGURE 2—Location maps, type locality, San Vicente Member, Boquillas Formation, Big Bend National Park, Brewster County, Texas.