

NOTE

**NODULAR FLINT IN THE MAASTRICHTIAN STRATA OF HANITA IN  
WESTERN GALILEE**

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The striking occurrence of flint nodules interbedded in Maastrichtian chalk in Hanita, is discussed. The same chalk-flint series usually mark the Paleocene and the Eocene age elsewhere in Israel. This flint facies cuts obliquely time-planes and indicates shifting of identical sedimentary environments in space and time.

*Data*

The columnar section of Hanita is presented here in Figure 1. It ranges in age from Turonian to Eocene and attains a total thickness of 250 m. The section is subdivided into five formations. As a proposition of formal names is now under preparation, the author, provisionally numbered, the unnamed formations.

The examination of the samples reveals five interesting points: 1. The lack of Santonian strata. (This subject is beyond the scope of this paper and will be discussed elsewhere). 2. The absence of the typical brecciated Campanian (Mishash) Flint. 3. The occurrence of nodular flint in the Maastrichtian chalk. 4. A sharp faunal break which marks the boundary between Cretaceous and Tertiary, and a lacuna of Lower Paleocene (Danian) strata.

*Discussion*

The problem of the Cretaceous-Tertiary boundary was discussed by many authors. Picard indicated it in 1943, and wrote in 1959 that in thick Senonian-Paleocene-Eocene "boundaries are not discernible without micropaleontological help". Reiss (1955) summed up the subject; he indicated the Maastrichtian-Danian faunal break and pointed out that this break not necessarily has to be accompanied by any distinct lithological change.

The first appearance of brown flint nodules, which are found above the soft chalky Senonian and Maastrichtian complex, was used by many Near-East geologists to define Tertiary strata only. This identification was used, up to now, as an effective practical field tool (Picard, 1943; Shaw 1947; Said, 1962). It has

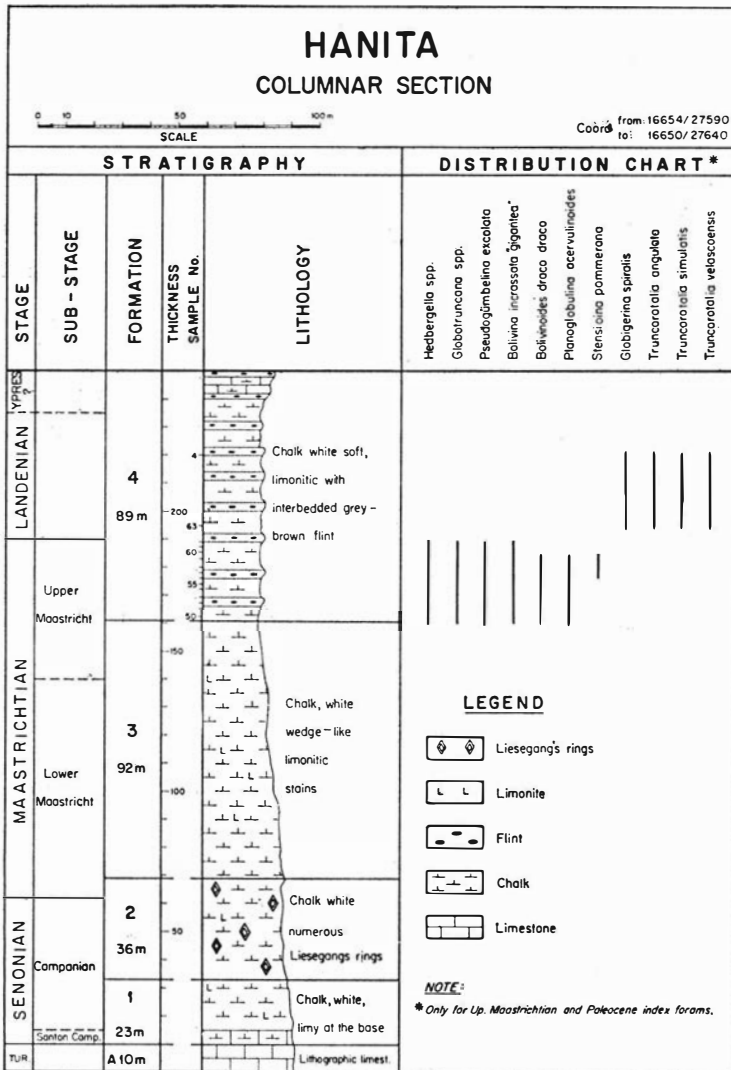


Figure 1  
Hanita columnar section.

been found, however, that the nodular flint does not mark the exact beginning of the Tertiary; but appears also in the older section of the Maastrichtian strata. The brecciated flint (Mishash Flint) follows below in the older beds of the Campanian.

The Flint-chalk beds, rich in planktonic foraminifera, indicate normal marine conditions, and they prevail in the Upper Maastrichtian and Paleocene in Northern

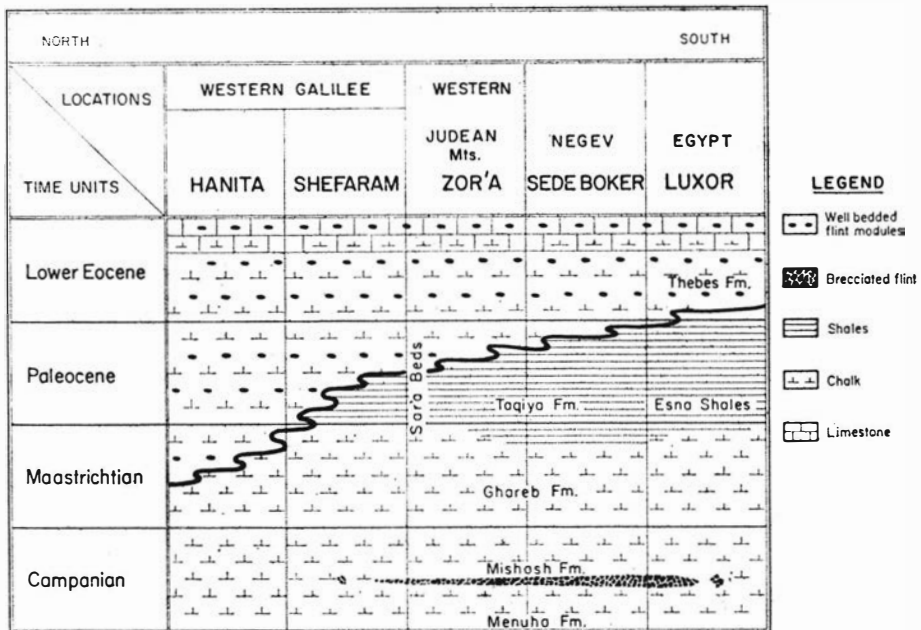


Figure 2  
Time transgressive Flint-facies.

Israel. At the same time, in the southern part, there are bituminous-marcasitic shales, which indicate different, basinal conditions (Avnimelech 1936, Resis 1962).

Hanita's Maastrichtian depositional environment shifts obliquely in the geological column, and reaches the Negev and Egypt, only in the Upper Paleocene and Lower Eocene (Figure 2).

Figure 2 is a good example of Caster's (1934) Magnafacies. The flint magna-facies transgresses irregularly from north to south, on the time-stratigraphic planes and reveals the increasing marine influence towards north-west away from the Arabo-Nubian massif (Picard 1959).

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