

Offprint from:

'ATIQOT

VOLUME XX



JERUSALEM 1991

VARIA

PRE-POTTERY NEOLITHIC B HEAD LICE FROM NAHAL HEMAR CAVE

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The excavations in Nahal Hemar Cave at the southern edge of the Judean Desert, approximately 15 km west of the Dead Sea, have revealed a unique Pre-Pottery Neolithic B assemblage, dated 6900–6300 BCE (uncalibrated; Bar-Yosef and Alon 1988). The constant annual temperature and the arid conditions of the cave allowed the preservation of numerous remains of organic and inorganic origin. The cave, which was occasionally used for storage of ritual objects, contained modelled skulls, stone masks, an anthropoid statue, figurines, knives and organic material such as human hair.

The hair found in the cave was examined for the presence of head lice. The hair sample was introduced into 50 ml of 70% ethyl alcohol and examined directly under the stereo-microscope ($\times 6$). Hairs with eggs or remains resembling a louse or its eggs were transferred to a microscopic slide with a drop of Hoyer's Medium and covered with a coverglass. The slide was placed on a hot plate for three days to preserve the sample.

Three non-operculated eggs (nits) of the human head louse (*Pediculus humanus capitis*) were isolated (Fig. 1). The length and width of these eggs were compared with those of today's head lice eggs. No differences could be found between the two groups.



Fig. 1. Non-operculated louse egg (nit), Nahal Hemar Cave.

Head lice eggs have been identified on the hair of an Egyptian mummy of the fourth century CE and on mummified Pre-Columbian Indians from Peru (Ewing 1924). Lice and their eggs were also isolated from prehistoric American Indians (El-Najjar and Mulinski 1983), from a 3,800 year old Loulan female mummy in China (Wen et al. 1987), and from 2,000 year old hair combs recovered in excavations in the Judean and Negev Deserts in Israel (Mumcuoglu and Zias 1988).

The lice eggs now recovered from the hair of an individual who lived about 9,000 years ago in or near Nahal Hemar Cave are, to our knowledge, the oldest known lice remains.

REFERENCES

- Bar-Yosef O. and Alon D. 1988. *Nahal Hemar Cave*. ('Atiqot [ES] 18). Jerusalem.
El-Najjar M.Y. and Mulinski T.M.J. 1983. Mummies and Mummification Practices in the Southwestern and Southern United States. In Cockburn A. and Cockburn E. eds. *Mummies, Diseases and Ancient*

- Cultures*. Cambridge. Pp. 103–117.
- Ewing H.E. 1924. Lice from Human Mummies. *Science* 60:389–390.
- Mumcuoglu Y.K. and Zias J. 1988. Head Lice, *Pediculus Humanus Capitis* (Anoplura:Pediculidae) from Hair Combs Excavated in Israel and Dated from the First Century B.C. to the Eighth Century A.D. *Journal of Medical Entomology* 25:545–547.
- Wen T. et al. 1987. Observation on the Ancient Lice from Loulan. *Investigatio et Studium Naturae* (Museum Historiae Naturae Shanghaiense) 7:152–155.

