BLUMEA 30 (1984) 69–70

POLLEN OF ULMUS (ULMACEAE) IN THE SUBFOSSIL RECORD FROM NORTH SUMATRA – A NOTE

B. K. MALONEY

Department of Geography and The Palaeoecology Centre, Queen's University, Belfast, North Ireland

SUMMARY

Details of a palynological record of *Ulmus* in North Sumatra extending from c. 15,700–c. 1,500 B.P. are presented.

Ulmus lanceaefolia Roxb. ex Wallich has been reported from submontane forest in the Batak highlands of North Sumatra (Touw & Van Steenis, 1968; Soepadmo, 1977). Unfortunately there is no description of its pollen in the literature. However, pollen of *U. parvifolia* Jacq., a related species, has 4 or 5 pores, is 22–32 μm 'wide', circular in shape in equatorial view, subspheroidal in polar view and has a rugulate sexine (Huang, 1972: 235).

Preliminary pollen diagrams from North Sumatra have been published (Maloney, 1980, 1981) but elm is not shown on these. *Ulmus* pollen was found (single occurrences) in eight samples. It was always 4-pored and resembled that of *U. parvifolia*, see plate 154: 25–30 in Huang (1972). Three elm species may be native in England and all three can produce some 4-pored pollen grains. Elm pollen occurs in the atmosphere from late January to early April mainly (Hyde, 1952). Samples from Tao Sipinggan containing elm pollen were chemically pretreated at Hull during the period 3–17 March 1975, so these pollen grains could be modern contaminants. However, no other possible contaminants were found and Pea Sim-sim samples containing similar pollen grains were prepared on 22–23 September 1974 and samples from Pea Sijajap (unpublished) at Queen's in the autumn of 1981.

Ulmus pollen occurred only once in the undated Pea Sijajap record. The ages of other samples containing elm pollen have been estimated assuming constant accumulation between radio-carbon dated levels and disregarding the statistical errors of the dates, so they are not precise. The oldest elm pollen (from 6.75 m depth at Pea Sim-sim) dates to c. 15,700 B.P. Other pollen grains were present at 4.75 m (c. 12,200 B.P.), 2.6 m (c. 8,600 B.P.) and 1.1 m (c. 3,900 B.P.). Those in the Tao Sipinggan profile date to c. 12,130 B.P. (9.2 m depth sample), c. 3,500 B.P. (4.7 m) and c. 1,500 B.P. (2.55 m).

As the nearest modern pollen source is over 50 km away, *Ulmus* may have grown closer to the pollen sites in the past. Elm pollen was absent from surface samples. Analysis of cores from sites nearer present-day sources could be more informative.

REFERENCES

HUANG, T-C. 1972. Pollen flora of Taiwan. National Univ. Press, Taipei.

HYDE, H.A. 1952. Studies in atmospheric pollen. V. A daily census of pollens at Cardiff for six years 1943–8. New Phytologist 51: 281–293.

MALONEY, B.K. 1980. Pollen analytical evidence for early forest clearance in North Sumatra. Nature 287: 324–326.

— 1981. A pollen diagram from Tao Sipinggan, a lake site in the Batak Highlands of North Sumatra, Indonesia. Mod. Quaternary Res. S.E. Asia 6: 57–76.

SOEPADMO, E. 1977. Ulmaceae. Flora Malesiana I, 8: 31–76.

TOUW, A. & C.G.G.J. VAN STEENIS. 1968. Note on Ulmus in Malesia (Ulmaceae). Blumea 16: 84.