

**Short note**

## **Eocene sponges from the North Sea Basin**

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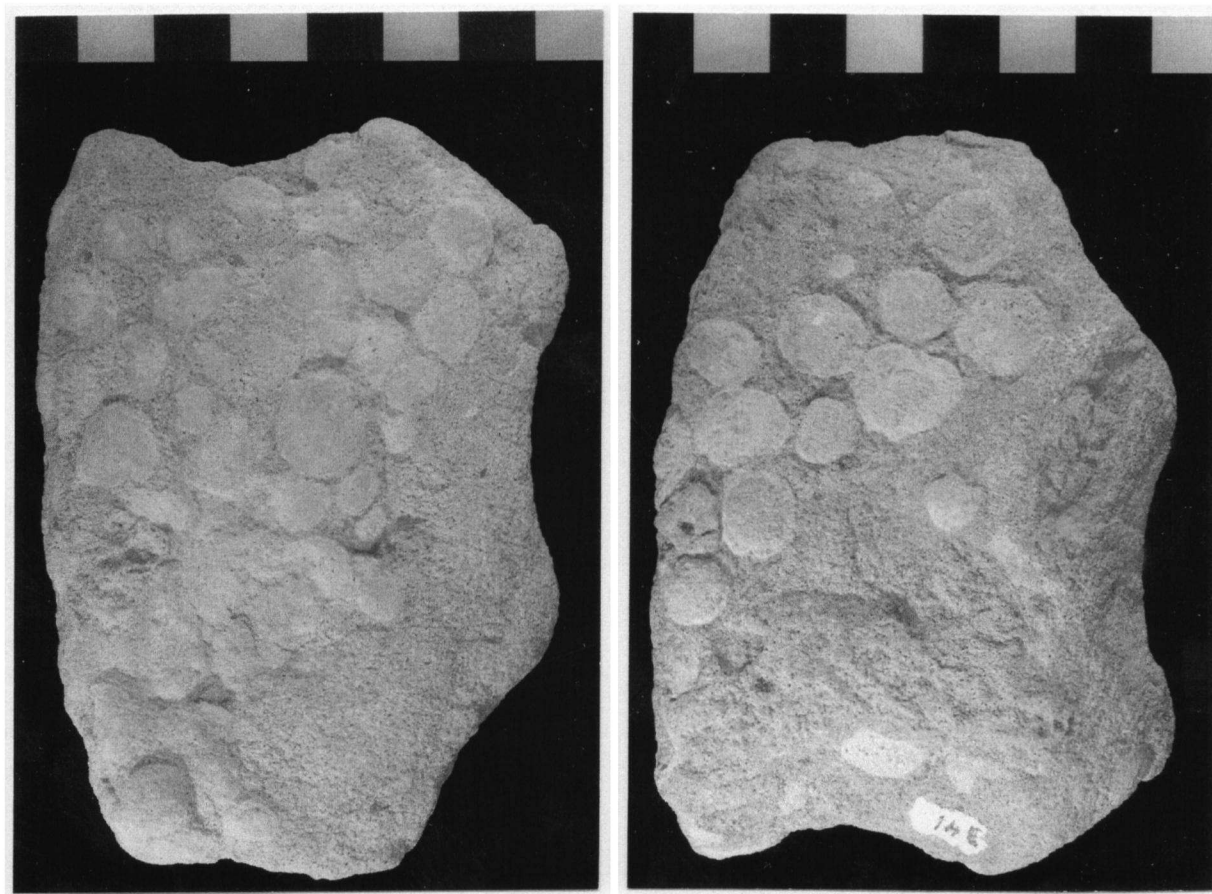
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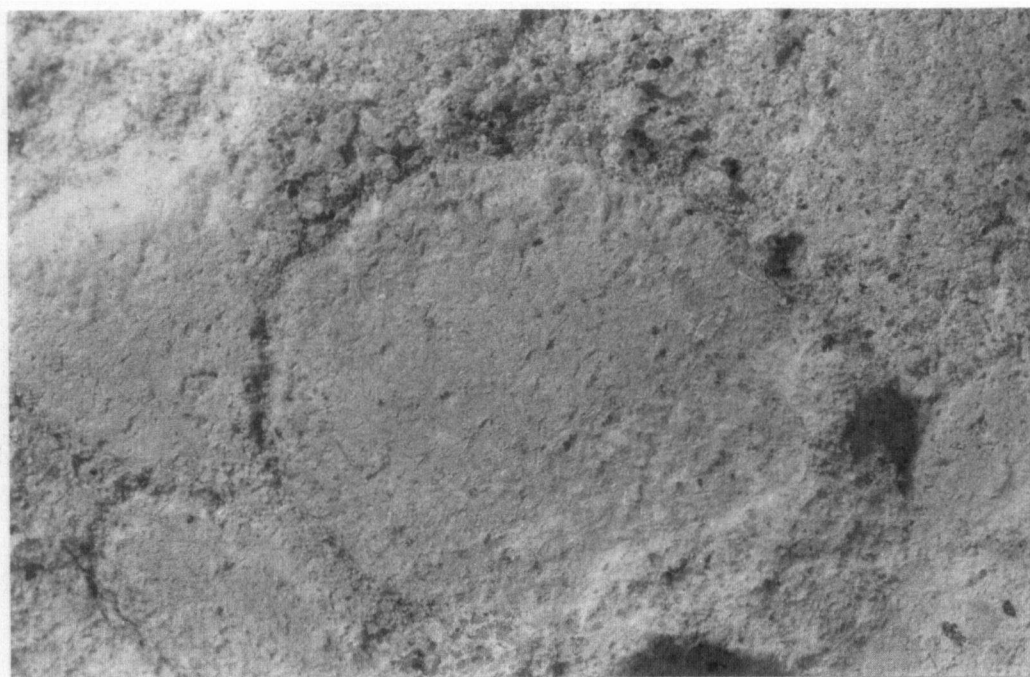
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Sponge remains have recently been recognised in a number of Eocene glauconitic sandstone pebbles, washed ashore at Cadzand-Bad (province of Zeeland, the Netherlands). These are here briefly described and illustrated. All material is housed in the collections of the Koninklijk

Zeeuwsch Genootschap der Wetenschappen (KZGW) at the Zeeuws Museum (Middelburg), under registration number KZGW 341. Additional specimens are in the collections of the Nationaal Natuurhistorisch Museum/Naturalis (Leiden).



**Figure 1-A, B** Indeterminate Eocene sponges (KZGW 341), washed ashore at Cadzand-Bad (the Netherlands); A, B - two views of large boulder containing numerous specimens.



**Figure 1-C** Indeterminate Eocene sponges (KZGW 341), washed ashore at Cadzand-Bad (the Netherlands); close up of a single sponge. Scale bar in cm.

Lot KZGW 341 comprises four pieces of sandstone with numerous sponges, two of which are here illustrated (Figures 1, 2); another is a single piece of sandstone with numerous sponges. The sponges are circular, disc-shaped to spherical in outline. Most specimens are flattened, but a few are spherical, with diameters of up to c. 15 mm. A circular osculum was observed in a single specimen. Siliceous spicules occur; their size ranges between 0.5 x 0.02 mm and 2.25 x 0.04 mm. Spicule shape is mostly simply needle-shaped, elongate, with tapering ends and a slight central curvature. Only a few spicules show branching at one end, and one has a more complex structure consisting of several broken-off branches.

The sponges occur in glauconitic sandstone boulders of the type that commonly yields late Early and Middle Eocene molluscan taxa such as the bivalves *Megacardita planicosta lerichei* Glibert & van de Poel, 1970 and *Orthocardium porulosum subporulosum* (d'Orbigny, 1850).

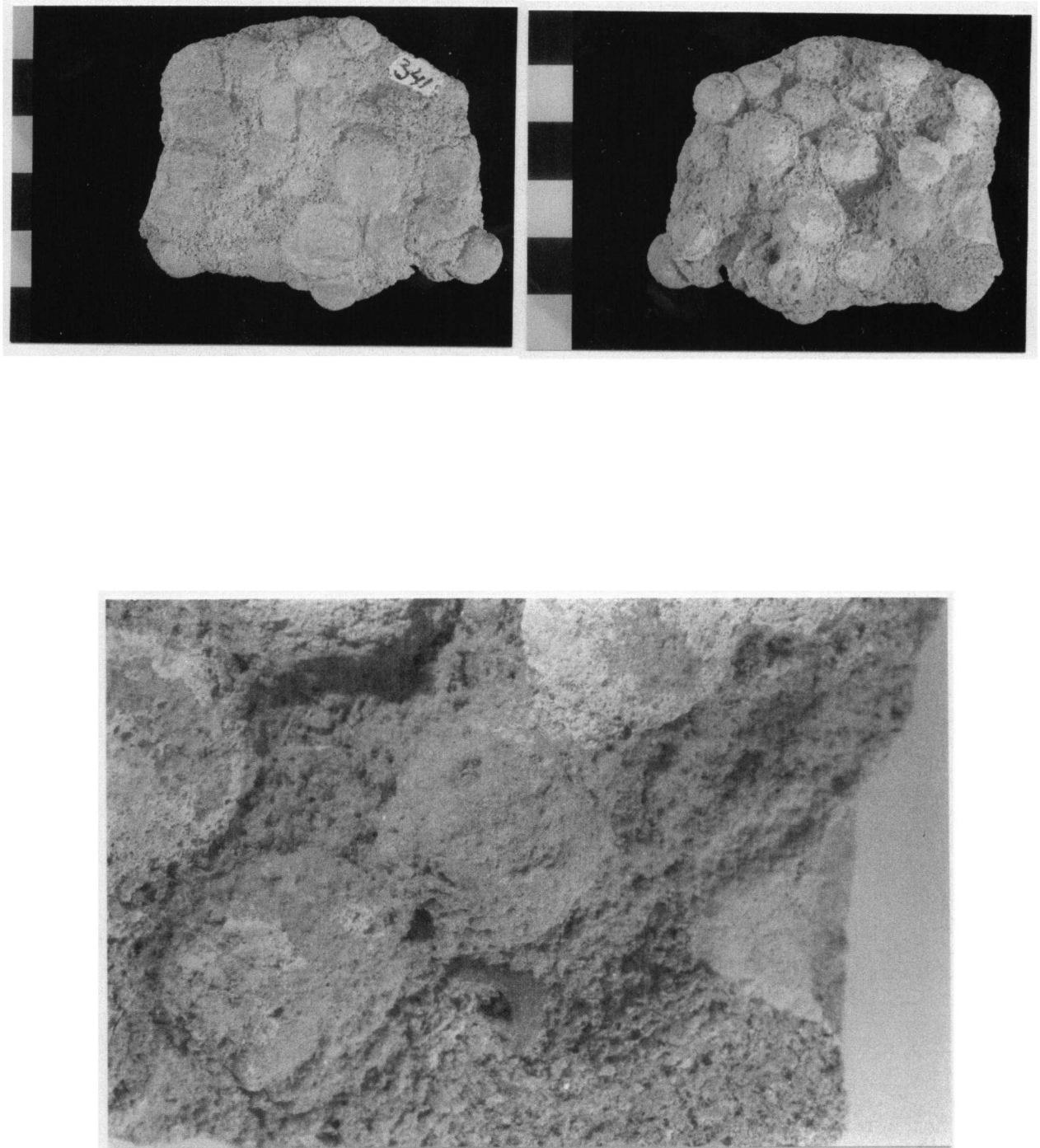
Since I am unaware of any previous records of siliceous sponges from the Eocene of the North Sea Basin, I

hope that the present note will raise an interest in these fossils.

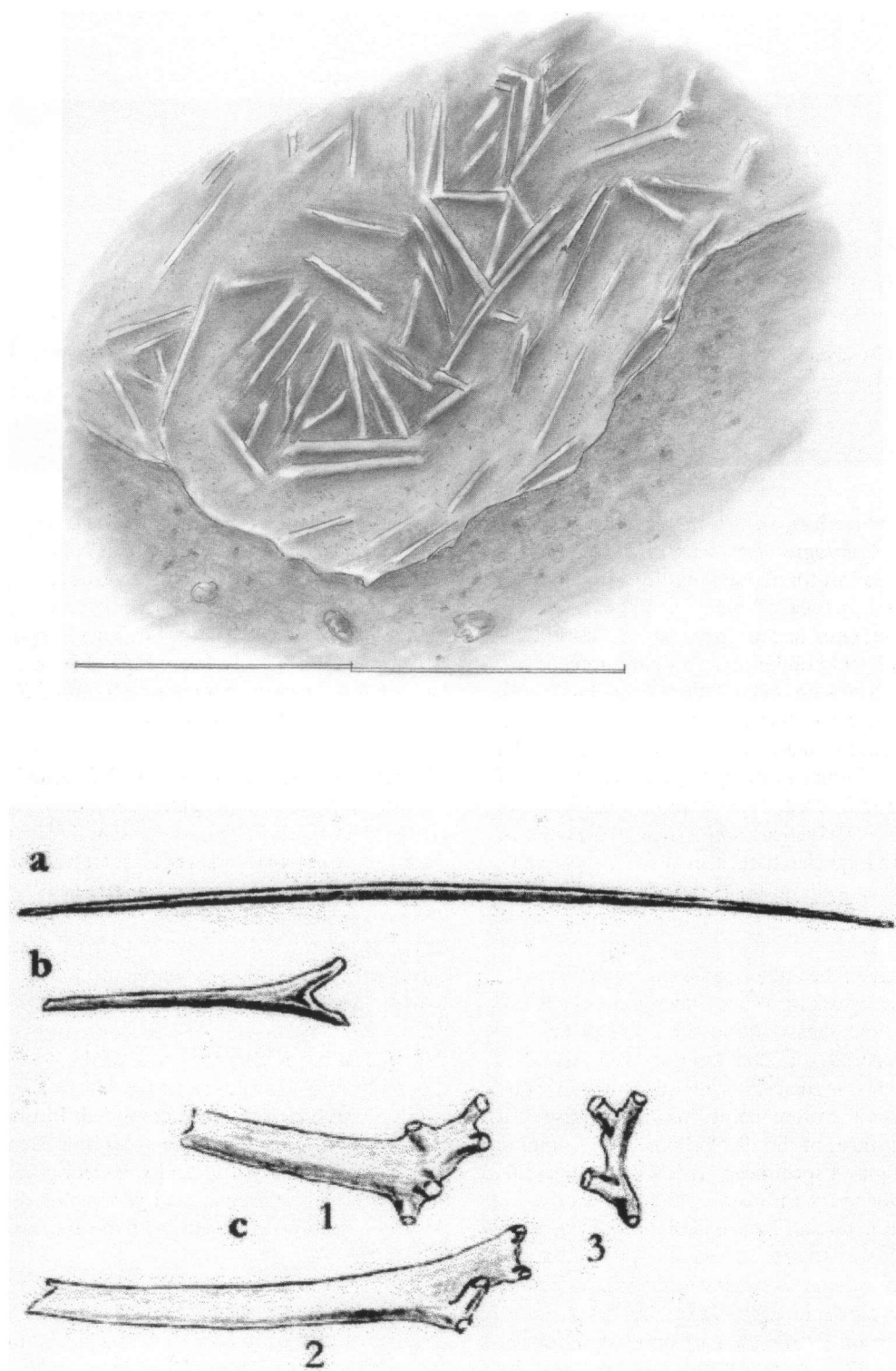
**Acknowledgements** — I thank Frank Wesselingh, John W.M. Jagt, and J.K. Rigby for critical reading and suggestions for improvement.

## References

- Glibert, M. & van de Poel, L. 1970. Les Bivalvia fossiles du Cénozoïque étranger des collections de l'Institut royal des Sciences naturelles de Belgique, 6. Oligodontina, 2: Sole-nacea, Mactracea, Cardacea - Astartodontina et Septibranchida. *Mémoires de l'Institut royal des Sciences naturelles de Belgique* (2)84, 1-185.
- Orbigny, A.D. D' 1850. *Prodrome de paléontologie stratigraphique universelle des animaux mollusques et rayonnés, faisant suite au cours élémentaire de paléontologie et de géologie stratigraphique* 1, lx + 394 pp. Paris (Masson).



**Figure 2-A, B, C** Indeterminate Eocene sponges (KZWG 341), washed ashore at Cadzand-Bad (the Netherlands); A, B - two views of a smaller boulder containing numerous specimens; C - close up of a single sponge. Scale bar in cm.



**Figure 2-D, E** Indeterminate Eocene sponges (KZWG 341), washed ashore at Cadzand-Bad (the Netherlands); D - detail of spiculae (camera lucida drawing); E - schematic drawings of spicule types, ranging from simple, tapering at both ends (a), to branched at one end (b) and with a more complex structure (c1-3).