

slightly sinuous suture, and *Hercoglossa*, in which the sinuosity of the suture is more marked.

Although Kummel (1956) did not doubt that *Cimomia* arose from *Eutrephoceras*, the evolutionary path is not clear. He stated (1964, p. K456): "[the] genus is a morphologically transitional form between *Eutrephoceras* and *Hercoglossa*." There are many gradational forms, and it is not known whether the *Hercoglossidae* had a single origin during the late Jurassic, or whether the morphological forms included in the *Hercoglossidae* evolved several times during the Cretaceous.

Kummel (1956: 330) stated that most nautiloid species are defined from one or a very few specimens, new species are based on slight variations of the shell or suture line, and because of this the "so-called species . . . have little reality in terms of our concept of neontological species." However, specimens from all around the world must be identified, and, as the phylogeny of the nautiloids is largely unknown, the only practical way to deal with the fossils is to introduce new species names where necessary. The four New Zealand specimens, described in this paper as a new species, are assigned to the genus *Cimomia* and the taxonomic classification of Kummel (1964) is adopted.

Superfamily NAUTILACEA
Family HERCOGLOSSIDAE
Genus CIMOMIA Conrad, 1866

Type species (by original designation): *Nautilus burtini* Galeotti, 1837, Eocene, Belgium.

The genus has not previously been recorded from New Zealand, but is known from Australia (e.g., Glenister *et al.*, 1956; McGowran, 1959). It contains many species, and Kummel (1964: K456) described it as being cosmopolitan and as ranging from Upper Jurassic to Oligocene. The comprehensive diagnosis of the genus by Miller (1947: 39-40) need not be repeated.

Cimomia zelandica n.sp., Pl 1, Figs. 1-5; Text-figs. 1a-d.

MATERIAL: Holotype, CE 2243, GS 9943 (N158/657), N.Z. Geological Survey, Lower Hutt; a well-preserved, almost complete specimen, in which the body chamber has been crushed prior to preservation.

Paratypes, CE 2246, GS 3794 (S35/524), N.Z. Geological Survey, Lower Hutt, a specimen comprising half the outer whorl, including part of the body chamber; a small part of the inner layer of the shell remains. CE 2244, GS 7056 (S31/631), N.Z. Geological Survey, Lower Hutt, a small well-preserved, almost complete specimen. CE 2245, GS 10179 (S169/935), N.Z. Geological Survey, Lower Hutt, an internal mould of a body chamber which shows a complete suture of the most adoral septum.

SPECIFIC DIAGNOSIS: The shell attains a diameter of at least 130mm and is subglobular, with a gently inflated outer whorl section which is slightly wider than high (Pl. 1, Fig. 2). The venter is more rounded than the flanks and there is a distinct ventrolateral shoulder. The umbilical shoulder is strongly rounded, and the umbilical walls are steep. The umbilicus is moderately wide, sub-circular in shape, with a maximum diameter about a seventh of that of the whole shell, and is not filled by callus.

The body chamber occupies approximately half the last whorl. On one side of the mould of the body chamber of CE 2245 there is a large muscle scar in the posterolateral position (Pl. 1, Fig. 5). The adorally concave septa are not closely spaced, and there are approximately 14 in the outer whorl of the holotype and nine in the outer whorl of the smallest of the paratypes (CE 2244). Each suture is sinuous, but not markedly so (Text-fig. 1a-d). It has a low, broad ventral saddle flanked by a rounded lateral lobe, and a narrowly rounded saddle immediately outside the umbilical shoulder. In CE 2245 a narrowly rounded lobe, on the umbilical wall, extends to a small saddle and a broad dorsal lobe, in the centre of which there is a small, distinct V-shaped annular lobe.