

First data on the Eocene diatoms from the marine Paleogene stratigraphic key section of northeast Kamchatka, Russia

Andrey Yu. Gladenkov

Geological Institute of Russian Academy of Sciences,
Pyzhevskii per., 7, Moscow 119017, Russia

The stratigraphic section on the Il'pinsky Peninsula, northeast Kamchatka, is a unique key section for the marine Paleogene with a practically continuous sequence composed of a 2500 m thick Paleocene through Oligocene sediments. It is one of the northernmost known places in the Pacific region where planktic foraminifera and nanofossils of Paleocene and Eocene have been documented and studied from different stratigraphic levels. The assemblages of calcareous microfossils correlative with their analogues from standard Paleogene zones have been used to subdivide the sedimentary succession and determine age of stratigraphic units. However, until recently the section has been considered to be barren of marine diatoms.

Additional sampling for diatom analysis was done during recent field work at the Il'pinski Peninsula. A number of samples collected throughout the section yield fossil marine diatoms. Study of their assemblages allowed distinguishing the "beds with diatoms" for different stratigraphic intervals of the Oligocene and infers their age (Gladenkov, 2008, 2009). Furthermore, diatoms are also documented from the older than the Oligocene part of the section. These diatom-bearing sediments are determined at the uppermost part of the Kylanskaya Formation having the Eocene age. *Stephanopyxis grunowii*, Genus et sp. indet., *Pyxilla gracilis*, *Hemiaulus* sp., *Triceratium (Lisitzinia) inconspicuum*, *Riedelia borealis*, *Coscinodiscus decrescens*, *Azpeitia* cf. *tuberculata* var. *atlantica*, *Goniothecium rogersii*, *Arachnoidiscus ehrenbergii*, *Stictodiscus kittonianus*, *Distephanosira architecturalis* are typical of the marine diatom assemblage studied from this stratigraphic level. The Eocene assemblages of nanofossils and planktic foraminifera (correlative with the zones P10 to P12 of standard Paleogene scale) documented from this part of section have an age within the Lutetian Stage. Thus, it indicates the middle Eocene (Lutetian) age of diatom flora. These are the first finds of the Eocene diatoms in the Northwest Pacific region having such correlation with assemblages of carbonate plankton.

The obtained data is quite important for an elaboration of detailed biostratigraphic subdivisions based on siliceous microfossils because finds of the Eocene diatoms are very rare in the Northwest Pacific and known only from few localities lacking direct correlation with carbonate plankton or magnetostratigraphic record.

References:

- Gladenkov, A.Yu. (2008). The North Pacific advanced Oligocene to lower Miocene diatom stratigraphy. *Bull. Geol. Surv. Japan* 59: 309-318.
Gladenkov, A.Yu. (2009). Fossil diatom flora from the marine Paleogene stratigraphic key section of northeast Kamchatka, Russia. *Acta Botanica Croatica* 68: 199-209.

The study was supported by the Russian Foundation for Basic Research, project no. 09-05-00 015.