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The preliminary results of larger foraminifera analysis from the Paleocene-Early Eocene of Southern Yemen, based on museums collections

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The recent work is based on collections, which were sampled in 1980-th by soviet geologists and preserving now in funds of Vernadsky State Geological Museum. They include litological samples with larger foraminifera (LF) and separated tests of LF from Paleogene of Atag area and Hadramaut plateau (Souternn Yemen). The planctonic foraminifera are very rare in considered samples.

According to lithological and foraminiferal composition all samples (about 100 numbers) are divided into three parts. The first one includes the LF tests, washed from sandy marls and shales of wells. The second unit represented by bioclastic limestones, partly silicified and dolomitized and rare marls, collected from the exposed sections. These units belong to Umm er Radhuma formation, which in Yemen dated by Paleocene-Eocene (Pignatti et al., 1998) or only Eocene (Ismail and Boukhary, 2008). The third, Lower Eocene unit in collections (Jeza formation) represented mainly by non carbonatic, gypsiferous argillaceous papery shales and marls. The most lower, marly part of section is opened by wells. The LF assemblages from marls of wells include the next rotaliids in lower part: Lokhartia lobulata Sander, L. haimei spirahordata Sander, L. cf. conditi Smout, Rotalia sp., Diktiokathina sp. The rests of Saudia tests are rare. In upper part Kathina erki (Sirel), Rotalia dukhani Smout and first small nummulites are marked. The lasts belong to Nummulites deserti group, having smaller protoconch and more compressed spire. Due to absence of true Eocene forms we consider these assemblages as paleocenic.

The next association, represented by abundant Lockhartia sp., Lockhartia diversa Smout, Sakesaria sp. and rare Daviesina khatyahi Smout, Operculina cf. ornata Hott. and established in hard limestones of Umm er Radhuma formation, identified as transitional from Paleocene to Eocene (Lower Ilerdian). In marls and shales, alternated with limestones in upper part of this formation the middle Ilerdian assemblage of LF is found. It includes Operculina subgranulosa (d'Orb.), Nummulites exilis Douv., Ranikothalia cf. nuttalli (Davies), Daviesina ruida (Schwager), Sakesaria cotteri Davies, S. nodulifera Sander, Lockhartia tipperi (Davies), Rotalia sp. (ex gr. R. trochidiformis).

In papery shales of Jeza formation the abundant prints of nummulitids usually prevail. Previously here were identified A-forms of Nummulites fraasi de la Harpe, N. exilis Douv. and N. spirectypus Donc. (Nemkov et al., 1990). The redefinition of these samples shown that nummulitids represented mainly by Operculina ammonea ammonea (Leym.), O. ammonea testosaga Hott. (A and B generation). In single samples Operculina subgranulosa, Sakesaria cotteri, Nummulites cf. spirectypus also present.

Therefore, the most interesting and poorly studied LF taxa of considered collections are represented by small Nummulites ex gr. N. deserti (Paleocene), Nummulites exilis, Operculina ammonea, O. subgranulosa, N. spirectypus (Middle Ilerdian). The separated tests of Sakesaria, Daviesina and Lockhartia are also of great interest in sense of their taxonomy and stratigraphic range.