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CLEANING METHOD FOR PLANKTONIC FORAMINIFERA SHELLS: AN OPTIMISED PROCEDURE

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*To isolate forminifera from the hard rocks such as mudstone, shells etc., is a hard work and requires expensive materials and equipment.*There are several techniques for disaggregating sediment samples involving a sodium pyrophosphate or a sodium metaphosphate solution. Some methods include kerosene, gasoline, varsol and concentrated H_2O_2liquids.In this short report we present a simple, fast and cheap method for isolating microfossil (planktonic-foraminifera) shells from the sediment grains surrounding them.This method issafe for the microfossils and provides good resultsfor identification.

Description of the method

The method of the techniques described below does not require special chemical labs- only a well ventilated room is necessary.

Figure 1. Directions for processing samples to recoverplanktonic foraminifera shells

The step-by-step procedure is as follow (figure 1).

1) 100g sample soakin distilled water for a few hours or overnight and then decant the water. If the sediment is hard, soaking is not enough to disaggregate it, additional treatment is required to break it down.

2) Add the 2% sodiumpyrophosphate solution (1, fig.1) to cover the rock. For a 100g sample, 100-150 mlshould be enough for one cycle. After 48 hourswash under running water. The 2% sodium pyrophosphate solution with the sample must be heated up to boiling degree (2, fig.1). Boiling in 3% hydrogen peroxide solution for 30 minutes is an effective means of breaking down hard samples.If sample is not disaggregated,this procedure can be repeated up to 10 times depending on type of the sample and washed with water after every procedure.
3) Stir the sample into ultrasonic cleaner by adding 200 ml 60°C water, pyrophosphate sodium 4 g and hydrogen peroxide 6 ml (33%) solutions, turn on the ultrasonic cleaner and leave it for 15 minutes, then wash under gentle stream of water. The procedure is repeated until the sample is completely cleaned from clay.
4) When the clay has been dispersed the sample must be washed and passed through a sieve of < 63 nm, 63-200 nm, 200-500 nm, > 500 nm to make it easy to separate the planktonic - foraminifera. Samples must be air-dried, then sprinkled onto ablack glass plate and divided into stripes to make it more visible under the microscope.

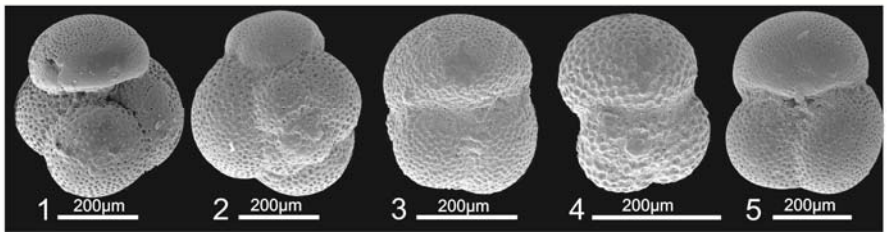

Figure 2. Planktonic foraminifera shells extracted by described method. 1. Dentoglobigerina baroemoenensis, 2. Dentoglobigerina baroemoenensis, 3. Dentoglobigerina eotripartita, 4. Dentoglobigerina eotripartita, 5. Dentoglobigerina galavisi. Pictures of planktonic foraminifera shells was taken in Orlov Paleontological Museum (Moscow) using TESCAN scanning electron microscope VEGA 2

In figure 2 planktonic foraminifera shells from Malishka section (Armenia)is presented. Using this method we got good preservation and well cleaned foraminifera shells, which was easy to identify underthe microscope.

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