

**Benthonic Foraminifera of the Marine Cenozoic Pelotas Basin.  
Rio Grande do Sul, Brazil.**

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**Abstract**

Studies on the smaller foraminifera from four drill holes in Pelotas Basin, Rio Grande do Sul give a picture of the sequence and conditions of sedimentary deposition of Tertiary age. Transgressional facies with characteristic fauna for marine and brackish water like *ELPHIDIUM discoidale*, *BUCCELLA frigida*, *BULIMINA patagonica*, *BULIMINELLA elegantissima* and principally by *ROTALIA beccarii parkinsoniana* marks the first transgression. This is followed by a continental facies in which the sediments are not fossiliferous.

The second transgression following this is characterised by marine and brackish water forms like *ELPHIDIUM discoidale*, *ROTALIA beccarii parkinsoniana*, *BULIMINELLA elegantissima*, *BUCCELLA frigida* and *QUINQUELOCULINA seminulum* which are observed to exist even in the recent sediments.

These are overlain by a thin layer of continental unfossiliferous sediments which are obviously of recent or subrecent age.

**A study of Foraminifera from „Laaer Serie“ (Miocene, Lower Austria)**

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**Abstract**

The term „Laaer Serie“ was introduced by KAPOUNEK, PAPP & TURNOVSKY (1960) for the fully marine Upper Helvetian formations in the molasse zone of the Outer Alpine Vienna Basin north of the Danube. After the literature, this is equivalent to the “Carpathic Serie“ of the Czechoslovakian geologists and belongs to the deeper part of the so-called Grunder Schichten. Except for very special studies on some forms of *Uvigerina*, *Elphidium* and *Ammonia* no systematic description of other foraminifera from this horizon so far could come to notice.

During the geological field work under UNESCO course in October 1965, a sample of clayey marl was collected from the brickpit “BRANDHUBER“ (the type locality of Laaer Serie) near the eastern margin of the village Laa an der Thaya and a study of the foraminifera of the sample was undertaken. About 40 forms were determined specifically, 4 could not be determined specifically. The species are as follows:

- Spiroplectammina* sp.
- Textularia* sp.
- Sigmoilina* cf. *celata* (COSTA)
- Sigmoilina* *tenuis* (CZJZEK)
- Nodosaria* sp.
- Amphicoryne proxima* (SILVESTRI)
- Lagena* cf. *acutiosta* REUSS
- Lagena* cf. *costata* (WILLIAMSON)
- Lagena squamosa* (MONTAGU)
- Lenticulina (Robulus)* cf. *cultratus* (MONTFORT)
- Lenticulina (Robulus)* cf. *rotulatus* (LAMARCK)

*Plectofrondicularia raricosta* (KARRER)  
*Bolivina dilatata dilatata* REUSS  
*Bolivina scalprata miocenica* MACFADYEN  
*Siphonodosaria advena* (CUSHMAN & LAIMING)  
*Bulimina pupoides* D'ORBIGNY  
*Reussella spinulosa* (REUSS)  
*Uvigerina bononiensis primiformis* PAPP & TURNOVSKY  
*Uvigerina graciliformis* PAPP & TURNOVSKY  
*Uvigerina parkeri breviformis* PAPP & TURNOVSKY  
*Baggina* sp.  
*Valvulineria bradyana* (FORNASINI)  
*Valvulineria complanata* (CUSHMAN)  
*Asterigerina planorbis* D'ORBIGNY  
*Ammonia beccarii* (LINNÉ)  
*Elphidium flexuosum subtypicum* PAPP  
*Elphidium minutum* (REUSS)  
*Globigerina concinna* REUSS  
*Globigerina diplostoma* REUSS  
*Globigerina opinata* PISVANOVÁ  
*Globigerina praebulloides* BLOW  
*Cibicides boueanus* (D'ORBIGNY)  
*Cibicides lobatulus* (WALKER & JACOB)  
*Cibicides aff. pseudoungerianus* (CUSHMAN)  
*Fursenkoina squamosa* (D'ORBIGNY)  
*Virgulina pertusa* (REUSS)  
*Caucasina elongata* (D'ORBIGNY)  
*Cassidulina oblonga* REUSS  
*Chilostomella czizeki* REUSS  
*Nonion commune* (D'ORBIGNY)  
*Nonion aff. granosum* (D'ORBIGNY)  
*Nonion soldanii* (D'ORBIGNY)  
*Pullenia bulloides* (D'ORBIGNY)  
*Epistomina elegans* (D'ORBIGNY)

The families represented are: Textulariidae, Miliolidae, Nodosariidae, Bolivinidae, Euvigerinidae, Buliminidae, Uvigerinidae, Discorbidae, Asterigerinidae, Rotaliidae, Elphididae, Globigerinidae, Cibicididae, Caucasinidae, Cassidulinidae, Nonionidae and Ceratobuliminidae.

The species which occur most commonly are: *Globigerina praebulloides* BLOW, *Globigerina concinna* REUSS, *Bolivina dilatata dilatata* REUSS, *Bulimina pupoides* D'ORBIGNY, *Caucasina elongata* (D'ORBIGNY), *Uvigerina bononiensis primiformis* PAPP & TURNOVSKY, *Uvigerina graciliformis* PAPP & TURNOVSKY and very small specimens of *Ammonia beccarii* (LINNÉ). Arenaceous and other forms have a limited occurrence. Out of the rest, the most interesting forms were *Baggina* sp., *Virgulina pertusa* REUSS and *Cassidulina oblonga* REUSS. As per the literature consulted, it seems that the genus *BAGGINA* is being reported for the first time from the Vienna Basin s.l.

The new terms *Fursenkoina squamosa* (D'ORBIGNY) [= *Virgulina squamosa* D'ORBIGNY] and *Caucasina elongata* (D'ORBIGNY) [= *Bulimina elongata* D'ORBIGNY] as introduced by LOEBLICH & TAPPAN are being accepted here for these forms of the Vienna Basin after a careful study. *Uvigerina bononiensis primiformis* PAPP & TURNOVSKY and *Uvigerina gracili-*

*formis* PAPP & TURNOVSKY are accepted as the guide forms for the Laeer Serie supporting the opinion of PAPP & TURNOVSKY. The fauna is a fully marin, shallow and warm water fauna. The species have been described systematically and well-preserved ones have been documented.

## On a new Collection of Neogene fossils from Eastern India (Baripada, Orissa State)

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Under a project on the paleontological and stratigraphical investigations of the Baripada Beds (a Neogene unit in the Eastern Coast of India in Orissa State) fossils are reported for the first time from the wells dug up for erecting the pillars of a bridge on the Budhabalanga River connecting Astia Ghat and Baripada town on the Baripada-Udala road (Mayurbhanj District, Orissa). The materials collected have been taken up for a detailed study under the guidance of Sri. M. V. A. SASTRY, Paleontologist in-charge of the Geological Survey of India. A financial grant from the Gnan Vijnan Parishad of Utkal University, India for a part of this work is gratefully acknowledged. A provisional identification of a portion of the materials as per the following list has been made in Vienna under the supervision of Prof. Dr. R. SIEBER in the museum of the Geological Survey of Austria during the author's stay in Vienna in 1965—1966. Permission of Director Prof. Dr. H. KÜPPER to study the materials in the museum of the Geological Survey of Austria is gratefully acknowledged.

The fossils collected from the strip of Budhabalanga River constitute chiefly lamellibranchs, gastropods, crabs and fish remains. The other minor elements in the fauna include bryozoan, balanid, echinoid, reptilian and mammalian remains. The molluscan fossils and other minor invertebrate elements were collected from the first greyish-yellow, arenaceous and gritty limestone band from the top of the profile in the wells along the width of the river and the crabs, fish remains and other vertebrate remains were collected mostly from the greyish-blue clay-heds immediately underlying and overlying the above limestone band. The molluscan fossils are wanting in shell material and are mostly preserved in state of external moulds and casts. In the molluscan population, lamellibranchs predominate over gastropods. The fish remains include mostly well-preserved isolated teeth, vertebrae, jaw fragments and spines of different sorts.

### Molluscan Fossils

#### Lamellibranchiata:

1. *Parallelipedium* cf. *prototortuosum* NOETLING.
2. *Pecten* cf. *kokenianus* NOETLING.
3. *Ostrea* cf. *papyracea* NOETLING.
4. *Dosinia* cf. *protojuvenilis* NOETLING.

Species of the genera *Leda*, *Arca*, *Arca* (*Anadara*), *Barbatia*, *Crassatella*, *Cardita*, *Linga*, *Cardium*, *Venus*, *Paphia*?, *Solen*, *Thracia* are also present.

#### Gastropoda:

1. *Turritella* cf. *lydekkeri* NOETLING.
2. *Natica* cf. *gracilior* NOETLING.
3. *Calyptrea* aff. *rugosa* NOETLING.
4. *Ficus* (*Ficus*) *conditus* BROGN.