Table 2 *Activities of glycogen synthetase and phosphorylase in control and perchlorate-treated rats. Glycogen synthetase activity is expressed as nanomoles of UDP formed/mg of protein, glycogen phosphorylase is expressed as nanomoles of Pi liberated/mg of protein under the conditions of incubation. The values are given as mean ± SD for six animals in each group*

Tissues	Enzymes	Control	$KClO_4$ treated	NH_4ClO_4 treated
Liver	Glycogen synthetase	410 ± 40	481 ± 36*	493 ± 45*
	Glycogen phosphorylase	350 ± 25	210 ± 7**	177 ± 18.6**
Muscle	Glycogen synthetase	621 ± 37	696 ± 49*	687 ± 50*
	Glycogen phosphorylase	500 ± 60	290 ± 43**	306 ± 46**

* $P < 0.05$; ** $P < 0.001$.

of glucose formed from glucose-6-phosphate and hence the lowering of the blood glucose level as *reported earlier*[4].

Hepatic glycogen accumulation is due to the decrease in the activity of glycogen phosphorylase along with the increase in the activity of glycogen synthetase in perchlorate *administered rats.*

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FIRST REPORT OF CONODONTS FROM THE INFRA-TRAPPEAN LIMESTONES AT DUDDUKURU, ANDHRA PRADESH, INDIA

A. V. R. SASTRY and A. NARASIMHA MURTY
Department of Geology, Andhra University, Waltair 530 003, India.

THE light yellowish limestones outcropping south of Devarapalli, Duddukuru and Pangidi (figure 1) in coastal Andhra Pradesh, west of the Godavari River, have attracted the attention of several workers[1-10], for their fossil content, which formed here the basis of bio-stratigraphic correlation. The stratigraphic succession is as follows:

Rajahmundry Sandstones	:	Miocene
Deccan Traps	}	Cretaceous-Eocene
Inter-trappean limestones		
Deccan Traps		
Unconformity		
Infra-trappean limestones		
Unconformity	:	Lower Cretaceous
Tirupati Sandstones		(Gondwana)

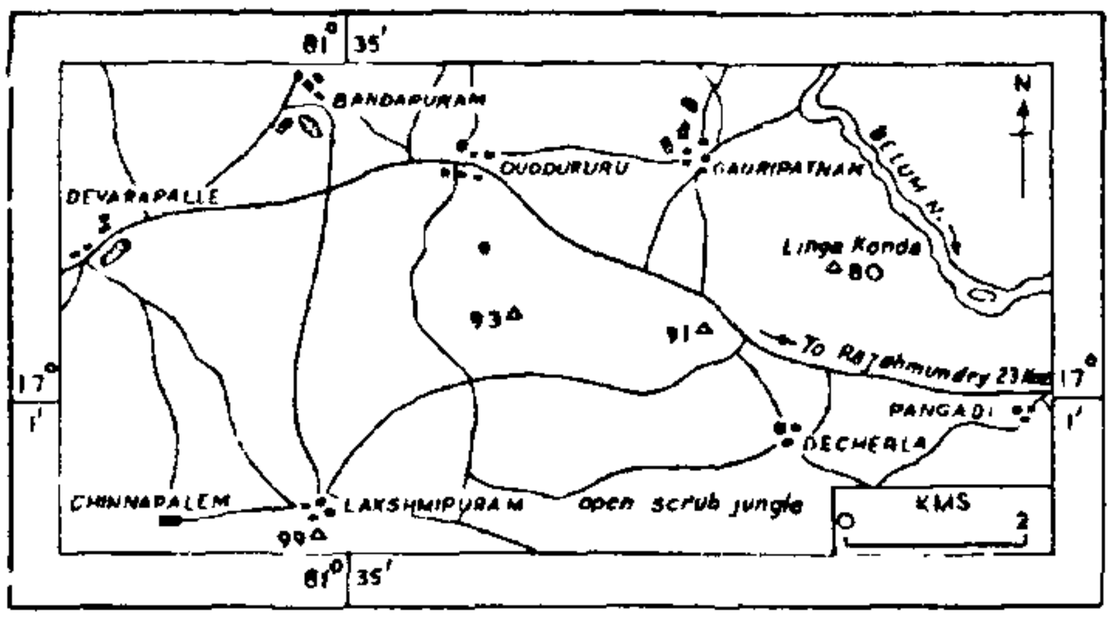

Figure 1. Location map showing the sampling sta tion.

The different types of fossils already reported[1-10] are Gasteropods, Pelecypods, Cephalopods, Foraminifera, Ostracoda, Radiolarians, Algae and fish teeth. The ages for the infra-trappean and intertrappean limestones suggested by earlier investigators on the basis of fossil evidence are shown in table 1. A critical appraisal of the basis on which the previous authors suggested the age for the respective formations appears to be equivocal since no diagnostic fossil criteria have been adopted. Intensive study of carbonate rocks has become inevitable to list the entire micro-faunal assemblages from which selective fossils can give diagnostic ages.

Figure 1 shows the location of the sample from which the conodont identified (figure 2) here is described. Gupta[11] reported conodonts from Triassic Formations in Kashmir, Ladakh and Spiti Himalayas. In Africa conodonts are found in rocks of Cretaceous age and this is probably the youngest age for conodonts so far reported. But subsequently it was concluded that these conodonts are reworked from Triassic Formation[12].

Conodonts are separated from the disintegrated rock. Under binocular microscope the conodont unit is milky white and translucent. The unit measures 1.0 mm in length and 0.24 mm in breadth. It consists of moderately arched bar with less prominent median ridge (figure 2). A large apical lip

Table 1 *Ages given by different authors to infra- and intertrappean limestones in Duddukuru area*

Author(s)	Fossils	Age and Formation
King[1]	*Turritella disposa*	Upper Cretaceous (IT)
Das Gupta[2]	*Cardita beaumonti*	Upper Cretaceous (IF)
Rao and Rao[3]	*Chara, Acicularia, Radiolaria*	Upper Cretaceous (IF)
Krishnan[4]	*Turritella, Nautilus*	Upper Cretaceous (IF)
Krishnan[4]	*Physa prinsepii, Corbula ingens, Cerethium stoddardi*	Upper Cretaceous (IT)
Pascoe[5]	Potamindes and its three sub-genera	Upper Cretaceous (IT)
Bhalla[6]	Foraminifera namely *Pseudopolymorphina devarapalliences* and *Planulina bhatiai*	Paleocene (IF)
Radhakrishna and Rao[7]	*Oolites*	Paleocene (IF)
Bhalla[8]	Foraminifera, Ostracoda	Dawn of Tertiary era (IF)
Bhalla[9]	Fish teeth (Teleost remain called *Eotrigonodon*)	Eocene (IT)
Radhakrisha[10]	Foraminifera, Ostracoda	Paleocene (IT)

(IT) – Inter-trappean Formation; (IF) – Infra-trappean Formation.

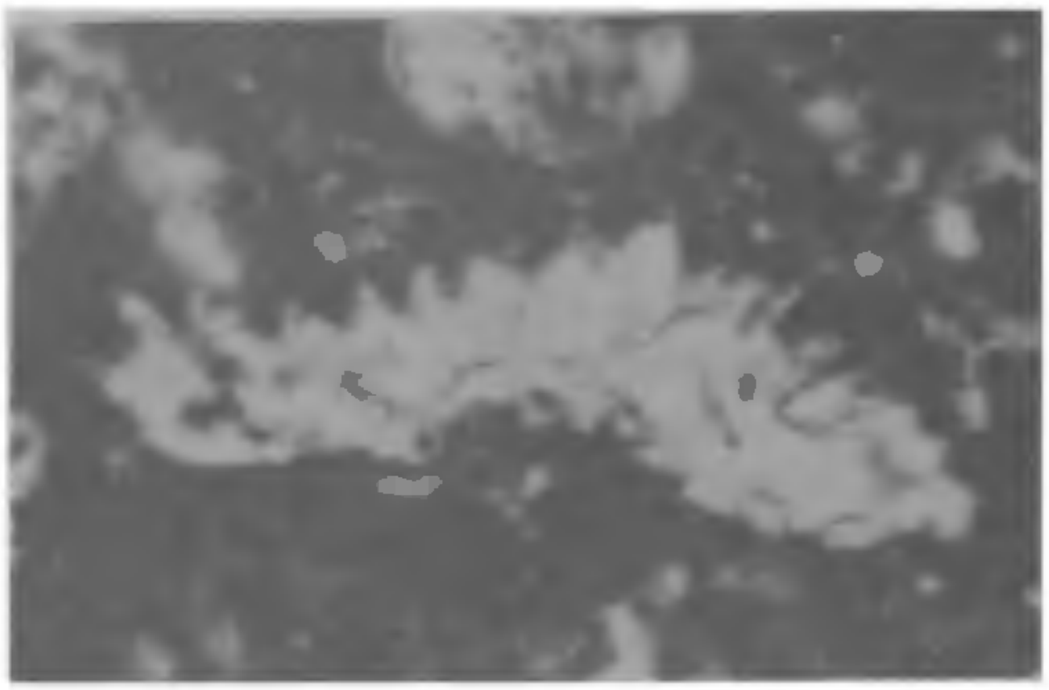

Figure 2. Microphotograph of *B. planus*. Plane polarized light (×60).

aborally surrounds a characteristic basal opening on the concave side of the unit. The denticles are short, stubby, pointed and are of subequal size. It has one large apical and two other coarse denticles on the posterior limb. Denticles are crowded and are both anteriorly and posteriorly inclined. The anterior side of the unit is comparatively wider and shorter than the posterior limb and bears eight fused denticles, whereas the posterior limb has nine denticles. The two germ denticles are restricted to the aboral side of the anterior limb.

Moderately thick and slightly curved bar with a basal cavity and a bigger apical denticle are the typical characters of the *Bryantodus planus* as originally described by Branson and Mehl[13] quoted by Canis[14]. According to Mound[15] *Bryantodus diagnus* is similar to *Bryanotodus planus* in having a moderately arched bar with a large aboral apical lip. But it can be distinguished by a prominent median lateral ridge. Branson and Mehl[13] and Canis[14] reported *B. planus* from Missouri Limestone Formations and assigned to them a Lower Mississippian age whereas Ellison Jr[16] and Thomas[17] described *B. planus* from the limestones in Southeastern Iowa (USA) and suggested that the formations are of Middle Devonian to Mississippian in age.

B. planus is associated with the following species of conodonts: *Neoprioniodus alatus* (Hinde), *Ancyrognathus asymmetrica*, *Clavulodus reniformis*, *Pelekysgnathus communis* Thomas, *Ozarkodina* Stein *hornensis eosteinhornensis*, *Gnathodus antetexanus*, *Eotaphrus burlingtonensis* Collinson and Norby, *Idiognathoides* sp *Rhachistognathus transitorius* and *Streptognathodus suberectus*. These associated conodonts are reported by different authors in rocks elsewhere ranging from Devonian to Pennsylvanian. The present report of new occurrence of conodonts from infra-trappean limestones at Duddukuru is of special significance in fixing up of the age of these limestones as Carboniferous.

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