bright opercle and sporozoites carrying one globule. The oocysts in *E. pacifica*, *E. duodenalis* and *E. patus* differ because of their ovoid shape. The oocystic shape and a greater oocystic size and thickness of its wall differentiate the oocysts of *E. megalostomata* from the present species. The large sized oocysts in *E. colchici* are easily distinguished by their elongated shape and the presence of a micropyle. The present oocysts are, therefore, assigned to a new species, *E. lophurae*—the first coccidium from Kaliz-pheasant (*Lophura leucomelana*).

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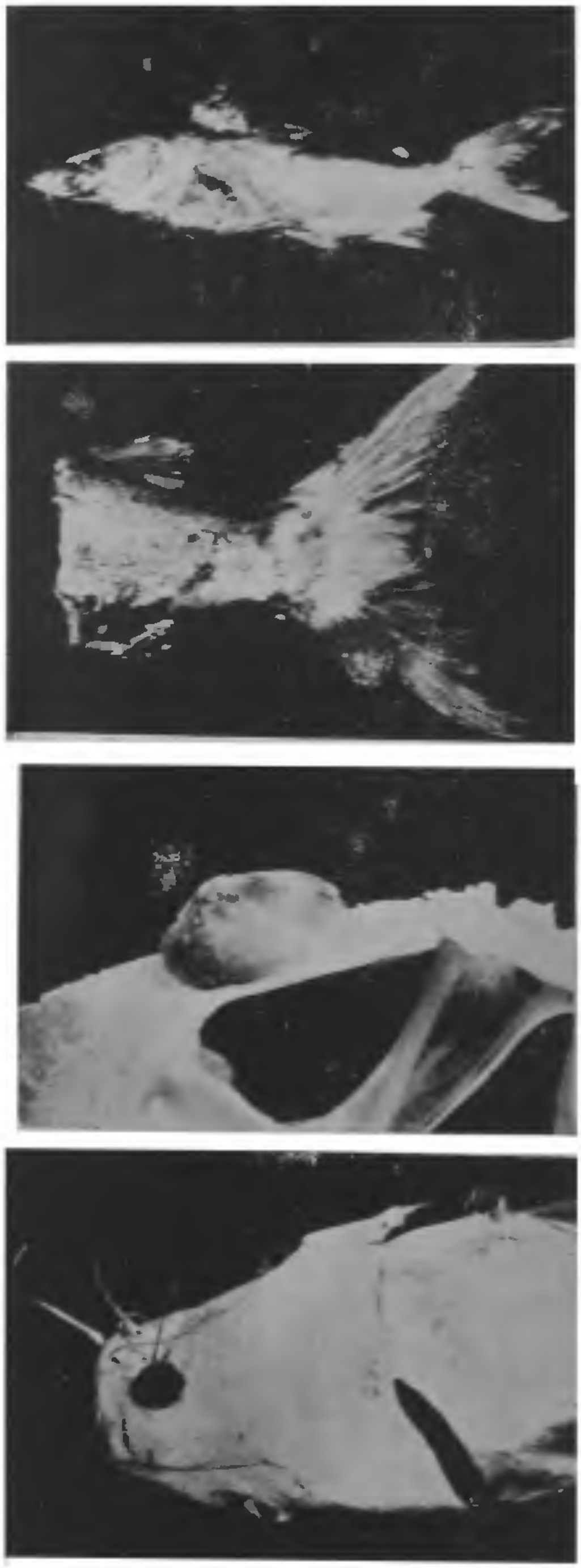
ON THE OCCURRENCE OF OSTEOMA IN A MARINE CAT FISH

TUMOURS of bone (osteoma) in fishes were first reported as early as the 17th century[1] and the latest is by Selvaraj *et al.*[2]. The occurrence of osteoma in the marine cat fish, *Arius maculatus* (Thunberg, 1792)[3] occurring in Porto Novo waters in the East Coast of India is reported here. A survey was made during the past 3 years (1973–1975) and interestingly *A. maculatus* was the only fish affected by osteoma. The details on number of specimens examined and the nature of tumours are given in Table I.

A total of 17 tumour affected fishes were collected during the period of survey. The caudal and dorsal fins were found to be the most commonly affected areas (Figs. 1 and 2). In 2 cases the tumours were found on the rostrum (Fig. 3–skin removed). In only one fish a tumour was found on one of the barbels (Fig. 4). The tumours



FIGS. 1–4.

TABLE I

Details of tumours occurring in the fish

Sl. No.	Date of collection	No. of specimens	Total length (mm)	Region affected	Size of tumour (Ht. × Dia. in mm)
1.	2–10–1973	1	580	Dorsal fin	10×14
2.	5–10–1973	2	(i) 476	Dorsal fin spire and rays scattered	5×14
			(ii) 512	Caudal fin rays	5×10
3.	20–10–1973	3	(i) 498	Base of the pectoral fin	7×11
			(ii) 441	Rostrum	5×17
				Caudal fin	5×9
			(iii) 530	Caudal fin scattered	3×12
4.	30–10–1973	1	462	Rostrum	5×15
5.	6–11–1973	1	570	Caudal fin	5×14
6.	10–11–1973	1	441	Dorsal rays	8×22
7.	11–11–1973	1	447	Infront of the first spine of the dorsal fin	40×45
				Dorsal fin rays	10×5
				Caudal fin	5×25
8.	17–11–1973	1	453	Caudal fin	20×15
9.	25–11–1973	1	466	Pelvic fin	17×9
10.	4–12–1973	1	400	Left side of the dorsal fin	15×10
				At opercular region	24×15
11.	18–3–1974	1	382	Dorsal fin	5×15
				Pelvic fin	5×10·2
12.	1–6–1974	1	432	Dorsal fin	3×8
				Pectoral fin	3·5×12·0
				Caudal fin	5×15·2
13.	1–11–1974	1	493	Caudal fin	7×17·8
14.	10–10–1975	1	482	Barbel	15×10

varied greatly in size from a pin head to 40 × 45 mm. These tumours occurred either singly or in groups of 3 to 5 in different sizes. The tumours with rough surface, were irregular in shape and had their origin in the bone. When the tumours were sectioned it was found to be a solid bony outgrowth with no space inside. Considering the total landing of *A. maculatus* at Porto Novo, the percentage of incidence of osteoma comes to only 2 to 7%. Recently Selvaraj *et al.*[2], reported on the occurrence of similar osteoma in 3 specimens of *T. jella* collected at South-West Coast of India. They observed osteochondroma in those specimens and this type was not observed in any of our specimens. Benign tumours of bone have been reported in 15 species of fishes and most of the tumours were probably sporadic occurrences[4]. The present report however indicates that there is a possibility of one species being more susceptible to bone tumours. These tumours in all probability represent exostoses which may be associated with a genetic predisposition in this species. Many attempts have been made to elucidate the etiology of such tumours but the exact reason is not known. A detailed knowledge of the epidemiology, pathology and cell biology of piscino neoplasm will not only help in ensuring the protection of fish populations but more significantly will serve to identify the presence of carcinogenic factors in the environment if any and their nature and mechanism of action.

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MAMMALIAN TESTIS IN ORGAN CULTURE

THE differentiating germ cell in the mammalian testis offers a good model for the study of mechanisms involved in selective gene activation and repression. The male gonad, however, is not amenable to experimental manipulations, since there are several complicating factors in *in vivo* systems which do not allow a proper evaluation of results[7]. Thus an *in vitro* system offers considerable advantages. Several attempts at cultivating the mammalian testis in organ culture have not produced encouraging results[1-3]. The present series of experiments deal with the intervals during meiotic differentiation which are particularly sensitive to explantation. Several techniques have been tried to cultivate the mammalian testis in organ culture and a comparison has been drawn between them. A new technique was tried which gave much better maintenance and possibly some differentiation.

Materials and Methods

Explantation experiments.—Ten adult male shrews were given an intraperitoneal injection of ^{3}H-thymidine and later sacrificed at 6 hr, 24 hr, 4 days, 7 days and 12 days post labelling. Two animals were used for each post labelling interval. Testes were removed aseptically, washed several times in Puck's saline (Mammalian) containing antibiotics. The *tunica albuginea* was carefully removed without disturbing either the seminiferous tubules or the interstitial cells. Each testis was then sliced into two or three parts each measuring about 2 mm^{3}. These were then placed side by side on a stainless steel wire grid, covered with teabag paper enclosed in a large sized Leighton tube. Mammalian Tissue culture medium, TC 199 (Difco) fortified with 15% foetal calf serum (GIBCO) antibiotic (100 IU/ml. penicillin, 100 mg/ml, streptomycin, 2·5 μgm/ml Fungizone) was then added so that the medium just reached the lower surface of the teabag paper and thus wetted it. The explants thus remained at the gas-liquid interphase. The Leighton tube was stoppered airtight to prevent change in pH (Table I gives the duration, each explant was in culture).

Comparative study of culture techniques.—Table II gives the various techniques that were tried for the culture of mammalian testis in organ culture. The general procedure was the same in all the techniques, and they differ only in the constituents of the organ culture medium except where otherwise mentioned.

TABLE I

Showing result of explantation experiments

Exp. No.	Labelled cells at the time of explant	Days after explantation	Labelled cells after explantation	Remarks
I. (*a*)	Premeiotic Interphase	5	Zygotene	*Sertoli spermatogonia*, Early pachytene absent, late pachytene pycnotic.
(*b*)	„	22	Nil	Sertoli present, large nucleated gonocytes present.
II. (*a*)	Zygotene	4	Nil	*Early pachytene absent*, middle and late pachytene pycnotic, large nucleated gonocytes present.
(*b*)	„	10	Nil	*Premeiotic interphase* and early pachytene absent. Mid and late pachytene pycrotic.
III. (*a*)	Leptotene	2	Zygotene	Large nucleated gonocytes present.
(*b*)	„	15	Nil	Large nucleated gonocytes present.
IV.	Mid-pachytene	15	Nil	Large nucleated gonocytes present.