Table 1 *Segregation pattern of albino expression in Bambusa arundinacea (Retz) Willd*

	Family No. 9		Family No. 12	
	Normal	Albino	Normal	Albino
Observed	870	289	1097	353
Expected	869.25	289.75	1087.5	362.5
Deviation	+0.75	−0.75	+9.5	−9.5
X^2 (3 : 1)	0.0025		0.333	

Reports on chlorophyll mutations in tropical forest species are meagre. A few reports are available on spontaneous mutation as in *Bombax*[3], *Gmelina arborea*[4] and *Pterocarpus santalinus*[5]. In Himalayan pine chlorophyll deficient plants segregated in a 3 : 1 ratio[1].

Spontaneous lethal mutants by themselves are not of any practical value. These types of albinos merely suggest that the said species may prove to be a suitable material for further studies through artificial irradiation and chemical mutagens[5]. But gene-carriers for this trait can be used as genetic markers for monitoring the degree of natural selfing. Squillace and Kraus[2] estimated the degree of natural selfing in slash pine by using albino gene-carriers as gene markers.

From the present study, it was revealed that clumps Nos. 9 and 12 were albino gene-carriers. The albinos noticed were lethal recessive homozygous recombinants resulted either by natural selfing or crossing between the clumps Nos. 9 and 12 and not merely spontaneous mutants.

Since bamboo clumps die after flowering and seeding, these original albino gene-carriers cannot serve as genetic markers in future. However, their progeny segregated in a genotypic ratio of 1 homozygous dominant : 2 heterozygous : 1 homozygous recessive. Since homozygous recessives were lethal, the remaining seedlings must be in the proportion of 2 : 1 albino gene-carriers to non-carriers. Hence, these carrier plants can serve as gene-markers for calculating the degree of natural selfing and crossing in *B. arundinacea*, in which, knowledge of the breeding system is very meagre.

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HISTOCHEMICAL STUDIES OF NON-SPECIFIC ESTERASES IN CORPUS LUTEUM OF THE BAT, CYNOPTERUS *SPHINX SPHINX*

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IT is well known that corpus luteum has a pregnancy maintenance effect[1]. The corpus luteum of pig is a chief steroidogenic site[2]. In the corpus luteum of *Chiroptera* only mucopolysaccharides have been studied[3]. The present investigation was undertaken to study the histochemical distribution of esterases and their role in steroidogenesis during pregnancy and involution in lactation period.

Adult female pregnant bats were collected during pregnancy and lactation period. The animals were killed by decapitation. The ovaries were dissected out and fixed in cold (4°C) Baker's fixative. The sections were cut at 6–8 μm on a Lipshaw cryostat at −20°C. The following two histochemical techniques were employed for enzyme localization. (i) α-naphthyl acetate as a substrate with Fast Blue as coupler[4]. (ii) 5-bromaindoxyl acetate as a substrate with ferri-ferrocyanide redox buffer[5].

The enzyme activity was very intense in theca luteal cells (figure 1) and moderate in granulosa cells. The involuting corpus luteum showed granular lysosomal activity (figure 2).

The non-specific esterase activity has been reported in corpus luteum of pig[2]. The lipid metabolism has also been reported in corpus luteum of pig[6]. The present investigation shows the presence of esterase in corpus luteum of pig which indicates that the corpus luteum secretes steroid hormones.

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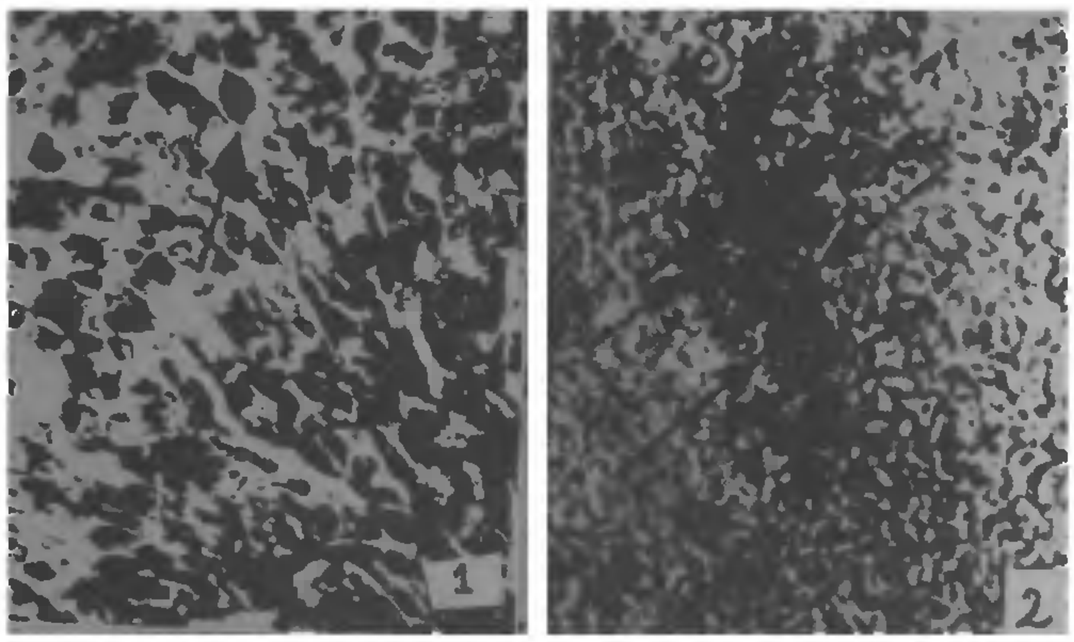

Figures 1, 2. 1. The dark theca luteal cells and faint granulosa cells. **2.** Arrows show degenerating parts of corpus luteum.

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EFFECTS OF BLOCKING OVULATION WITH PENTOBARBITONE ON OVARIAN PROTEINASES IN RATS

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THE detailed mechanism of rupture of the follicle wall in mammalian ovulation is not well known. The mature ovarian follicles contain proteolytic enzymes[1–7], which are one of the many factors involved in the rupture of follicular wall to enable the ovum to escape from it during ovulation [4,7] and the latter is induced by endogenous luteinizing hormone (LH) surge from the pituitary which is under the control of central nervous system[10]. The administration of pentobarbitone sodium (PBS) on the afternoon of proestrous blocks the pre-ovulatory surge of LH and thus ovulation is prevented[8–15]. The biochemical changes induced by PBS injection in previous studies include a decrease in follicular oestradiol production between proestrous and one day afterwards[9–15]. There is no previous report on the effects of PBS on ovarian proteolytic enzymes. Therefore, it was planned to find out the activity of ovarian proteolytic enzymes on different days of the estrous cycle as well as after blockage of ovulation by PBS injection given in the early afternoon of proestrous.

Thirty adult female albino rats, aged 2–3 months, and weighing 150–200 g, provided with pelleted food (Hindustan Levers Ltd) and water *ad libitum* were used. Vaginal smears were examined daily and only the rats showing two or more regular cycles of 4 days length were used. Five animals were sacrificed in each of the stages and the remaining ten were injected with PBS dissolved in normal (0.9%) saline in a dose of 3 mg per 100 g body weight between 14–30 and 15.00 hr in the afternoon of proestrous. The occurrence (in the normal) and blockage (in PBS treated) of ovulation was established by checking the oviducts for the presence of eggs and ovaries for the postovulatory follicles on the morning of estrous.

Preparation of homogenate: The animals were sacrificed by decapitation and the ovaries dissected out in the cold normal saline were cleared of the fat and adhering tissues, weighed, minced and homogenized with 1 ml of 0.01 M $CaCl_2$ containing 0.025% Triton X-100. The homogenate was centrifuged at 4°C for 20 min and diluted to 3 ml total volume, per two ovaries of each animal. The preparations were stored at –20°C and used within one month for enzyme assay.

Enzyme assay: The activity of neutral proteases was measured using 3% casein as a substrate at pH 7.5. The assay media were incubated at 37°C for 1 hr. The reaction was stopped by adding 10% (W/V) TCA. After keeping the solutions at room temperature for at least 15 min, they were centrifuged at 2500 RPM for 10 min. The supernatant was transferred to a clean tube and the absorbance of the supernatant was measured at 280 nm.

The enzyme activity is expressed as the tyrosine