TABLE II

Plasma enzyme activities in Cases of Hurler's syndrome

	Beta-galactosidase*	Beta-N-Acetyl-glucosaminidase*
Patients	0·433 – 0·120 (0·01 < p < 0·05)	1·398 ± 0·580 (p < 0·05)
Controls	0·262 ± 0·047	0·790 ± 0·079

* Micromoles of substrate converted per minute per litre. The values represent mean. Range is shown in parentheses.

It was noted that there was an increase of beta-galactosidase activity, a finding which needs to be confirmed on a larger number of cases.

Metabolic disorders which are rather rare in any given population provide an opportunity to understand normal pathways and their study has thus been highly rewarding. A proper identification of the biochemical basis can also help in rational therapy and prevention of similar abnormality in a subsequent offspring.

Apart from the urine examinations to detect MPS, attempts have been made with success to diagnose specific enzyme defects in each type of MPS by leukocyte studies or by using skin fibroblasts grown in tissue cultures[4]. It has also been noted that while skin fibroblasts of MPS–I or MPS–II in tissue cultures show metachromasia and accumulation of S^{35} when tested separately, this is not seen when they are grown together[1]. This indicates that these two conditions are genetically distinct. MPS–I is an autosomal recessive trait and hence to a couple who has had one child so affected, there is a 25% chance of having a similarly affected child. However, no satisfactory therapy for MPS is as yet availale. Vitamin A, Steroids, etc., are of no value. Enzyme therapy by plasmapheresis has a short action only. Prenatal diagnosis is now possible to diagnose either syndrome. The enzyme estimations[7] can be made on the amniotic fluid cells grown in culture. Selective therapeutir abortion of affected fetuses can help reduce the number of mentally retarded and allow parents to have a normal baby.

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June 23, 1977.

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OCCURRENCE OF TRIPLET FOETUSES IN THE SLENDER LORIS, *LORIS TARDIGRADUS LYDEKKERIANUS* CABR.

DURING our studies on the placental and foetal development in the slender loris, *Loris tardigradus lydekkerianus*, we came across a pregnant uterus containing three foetuses. It is not uncommon in these prosimians to find twins as reported by Hill[1] and Ramaswami and Anand Kumar[2]. So far as we know, this is the first report of triplet foetuses in the slender loris. In other prosimians, such as *Cheirogaleus*[3], *Tupaia*[4], and *Microcebus*[5] usually triplets are born. Zuckermann[6] reported a single instance of triplets in *Lemur macace*.

The three foetuses reported here differ in their size and weight (Table I and Fig. 1). The largest foetus

TABLE I

Weights and lengths of the triplet foetuses

	Weight in mg.	Length in mm	
		Total length	CR length
Foetus A	1210	47	35
Foetus B	810	40	32
Foetus C	340	34	25

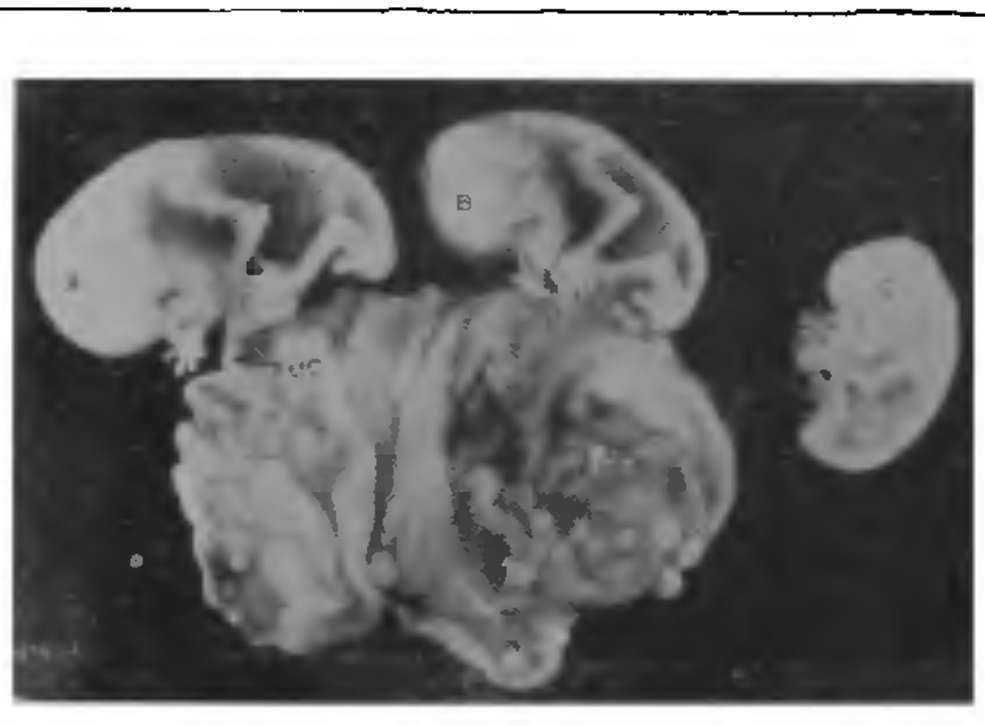

FIG. 1. Photograph of the triplet foetuses A, B and C with their placental connections. × 2 (2¾"/4⅓"). UC, Umbilical cord.

(Fig. 1, A) occupied the right half of the uterus with its placenta being the most expansive. The other two foetuses (B, C) were accommodated in the left half of the uterus, the larger of the two (B) having a bigger placenta than that of the other foetus C. Sections of the ovaries of the mother revealed two corpora lutea in the left ovary and a single one in the right, indicating that the triplets are triovular. The differences in size and stage of development of the triplets may be due to delayed or deferred implantation of the left horn. This would mean that the ovulation took place simultaneously in both the ovaries and the blastocysts might have arrived later into the left horn of the uterus than in the right. The other interpretation to explain the inequality in the stages of development of the foetuses is that all the three blastocysts might have arrived simultaneously into the respective horns of the uterus but the milieu in the left horn did not permit as large a growth as in the right horn, probably due to vascular and nutritional insufficiency. However, the three foetuses do not exhibit retarded growth and the sections of the foetuses are normal when compared with those of the foetuses from single or twin pregnancies. That deferred implantation may be the more probable cause is further strenghthened by the fact that in another pregnant uterus, the right half was larger containing a bigger foetus and the left half had a smaller embryo; the ovary of this female also showed corpora lutea. If both the blastocysts had implanted simultaneously, they would have reached the same growth stage but as the left blastocyst probably arrived later, the right one had developed into a more advanced stage. The asymmetrical appearance of the uterus, however, is not of common occurrence and the reason for delayed implantation, if it occurs, is not known.

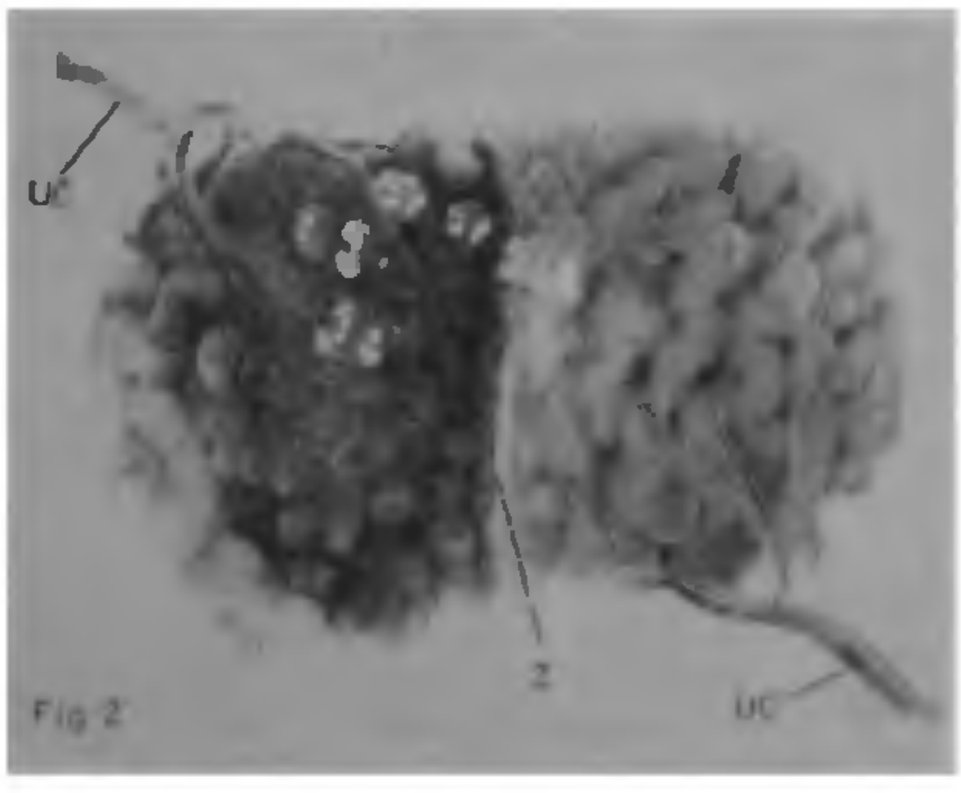

FIG. 2. Photograph of the placenta injected with Indian ink. Z. Zone of separation of the two placentae. ×2 (2¾″/3¼″).

There are both heterosexual and isosexual twins in the slender loris and there is no free-martin effect as the placental circulation of the foetuses is distinct[2]. In the triplets reported in this paper, foetuses A and C are males and foetus B is a female as confirmed by the histological details of the foetal gonads. The maternal and foetal circulations are separate and the epitheliochorial placentae of the foetuses have no vascular anastamosis as borne out by the photograph of the placenta injected with Indian Ink (Fig. 2). Indian ink injected into the umbilical artery of one of the foetuses did not enter the placenta of the adjoining foetus as seen in Fig. 2.

One of us (M.S.S.) is grateful to the Council of Scientizc and Industrial Research for an award of Fellowship.

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EFFECTS OF TOTAL BODY SUB-LETHAL DOSE OF GAMMA-IRRADIATION ON ASCORBIC ACID LEVELS IN PIGEON TISSUES

THE drop of ascorbic acid in irradiated tissues has been the subject of several studies[1–4]. It has been suggested that extent of the drop in the ascorbic acid level after irradiation may be a measure of the severity of emergency situation[1]. It has also been observed that X-irradiation of ascorbic acid in aqueous solutions results in a loss of 1·7 to 2·4 μmoles of ascorbic acid after 1000 rads[2]. In biological system however, lipid peroxides formed due to irradiation are believed to inhibit the microsomal synthesis of L-ascorbic acid[3]. Many reports are available concerning effects of total body irradiation on levels of ascorbic acid in different tissues of mammals[3–5]. To our knowledge no such data are available on effects of radiation on birds. The present study deals with effects of sub-lethal dose (400 rads) of gamma-irradiation on ascorbic acid levels in tissues of pigeon.

Thirty-five pigeon (*Columba livia intermedia* Strickland) of both sexes weighing approximately 270 g were fed with a mixture of equal amounts of bajra and sorghum