the post-synaptic fibres not only move to the stratum marginale of ipsilateral tectum but also some of them (post synaptic dendritic processes of the neurons of the torus) move to the other torus as presynaptic fibres and hence through the postsynaptic processes of the torus pass on to the contralateral tectum. The neurons of the tori serve as the intermediate neurons to transmit impulses on to the opposite side as is expected in a true optic chiasma.

Retinal projections are seen in the stratum opticum and the stratum fibrosum et griseum superficiale[6-13]. Ebbesson and Vanegas[12], and Ito *et al*[13] reported that the contralateral tectal projections are in a deep area of the stratum griseum centrale. The fact that the tori are connected to each other and with the optic tecta indicates that the tori longitudinales can function as segregating/integration centres similar to the geniculates of mammals.

The presence of well-developed tori in the deep sea fish, *Cyclothone* (Shanklin[14]) and their occurrence in the blind fish, *Troglichthys* and *Typhlichthys* (Charlton[15]) rule out their direct role in the photostatic and gravistatic functions. Thus, their presence appears to compensate for the absence of a true optic chiasma performing the function of a two-way station i.e. receiving and segregating the inputs from the two eyes.

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DEPOSITION OF LEAD IN REPRODUCTIVE ORGANS OF MALE RATS FOLLOWING THE ADMINISTRATION OF LEAD ACETATE

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ADMINISTRATION of lead caused reproductive impairment and growth retardation in male rats[1]. Detachment of hypocellular germinal cell layer from basement membrane, interstitial oedema and degeneration of spermatogenic cells were observed with lead treatment in rat testis[2]. The accumulation of cholesterol and inhibition of some key steroidogenic enzymes like Δ^5-3β hydroxysteroid dehydrogenase in lead-treated rat testes suggested the inhibition of steroidogenic process[3]. However, no reports are available on the deposition of lead in male reproductive organs. The present investigation was, therefore, undertaken to study the distribution pattern of lead in reproductive organs of male rats after treatment with lead acetate.

Male albino rats of Charles Foster strain, weighing 150 ± 5g were obtained from our Institute colony. Animals were divided into five equal groups, maintained on standard diet and water was provided *ad libitum*. Group I served as control while groups II, III, IV and V received lead acetate daily intraperitoneally at the dosages of 1, 2, 4 and 6 mg/kg body weight over a period of 30 days. The final body weight of the animals was noted at the end of the experimental period. On the 31st day prior to sacrifice, the animals were anaesthetized and the blood was collected from retro-orbital venous plexus for the estimation of blood lead[4]. The animals were then sacrificed by cervical dislocation and all reproductive organs viz testes, epididymis, vasdeferens, prostate and seminal vesicle were

Table 1 *Body weight, blood lead and reproductive organ weights of male rats exposed to lead acetate. The number of observations in parentheses are mean ± S E.*

Group	Body weight (g) (5)	Blood-Pb (μg/100ml) (5)	Testis (g) (10)	Epididymis (g) (10)	Vasdeferens (g) (10)	Prostate (g) (5)	Seminal vesicle (g) (5)
I	240	5 09	1 24	0.49	0 13	0.18	0 44
Control	±1 5	±0 21	±0 01	±0 03	±0 008	±0 003	±0 01
II	232	56 10	1 16	0 48	0 13	0 17	0 42
1 mg kg	±1 8*	± 1.45**	±0 02	±0 03	±0 006	±0 005	±0 009
III	220	91 51	1 12	0 41	0.11	0 13	0 40
2 mg kg	±3 1**	± 2 40**	±0 04**	±0 03*	±0.008*	±0 006	±0 01
IV	201	196 30	0.73	0.38	0.09	0 10	0 37
4 mg kg	±7 3 *	± 11 00**	±0 01**	±0.02**	±0 005**	±0 003**	±0 02**
V	171	332 72	0 68	0 35	0 08	0 08	0 30
6 mg kg	±1 8 *	± 28 5 *	±0 01**	±0 02**	±0.006**	±0.004**	±0 02**

* $P < 0.05$, ** $P < 0.01$.

dissected out and weighed. Five tissues of each organ from each group were collected and separately digested with concentrated nitric acid for the determination of lead by atomic absorption spectrophotometer[5].

Body weight was significantly reduced in all the treated groups than in control. The absolute weight of testis, epididymis and vasdeferens in groups III, IV and V, and the prostate and seminal vesicle in groups IV and V decreased significantly (table 1). Gradual accumulation of lead was observed in all the reproductive organs along with elevated blood lead levels in the treated animals (figure 1, table 1).

Gradual decrease in the body and the reproductive organ weight may possibly be due to the manifestation of lead toxicity in the treated rats. Significant increase of blood lead and tissue lead levels in all the treated animals indicated that the administered lead is absorbed in blood and accumulated in reproductive organs. Further, the deposited lead in reproductive organs may form complexes with key cellular ligands and thereby impair cellular structure and functions[6,7]. Thus, the present results suggested that the accumulation of lead may affect the structural and functional integrity of male reproductive organs.

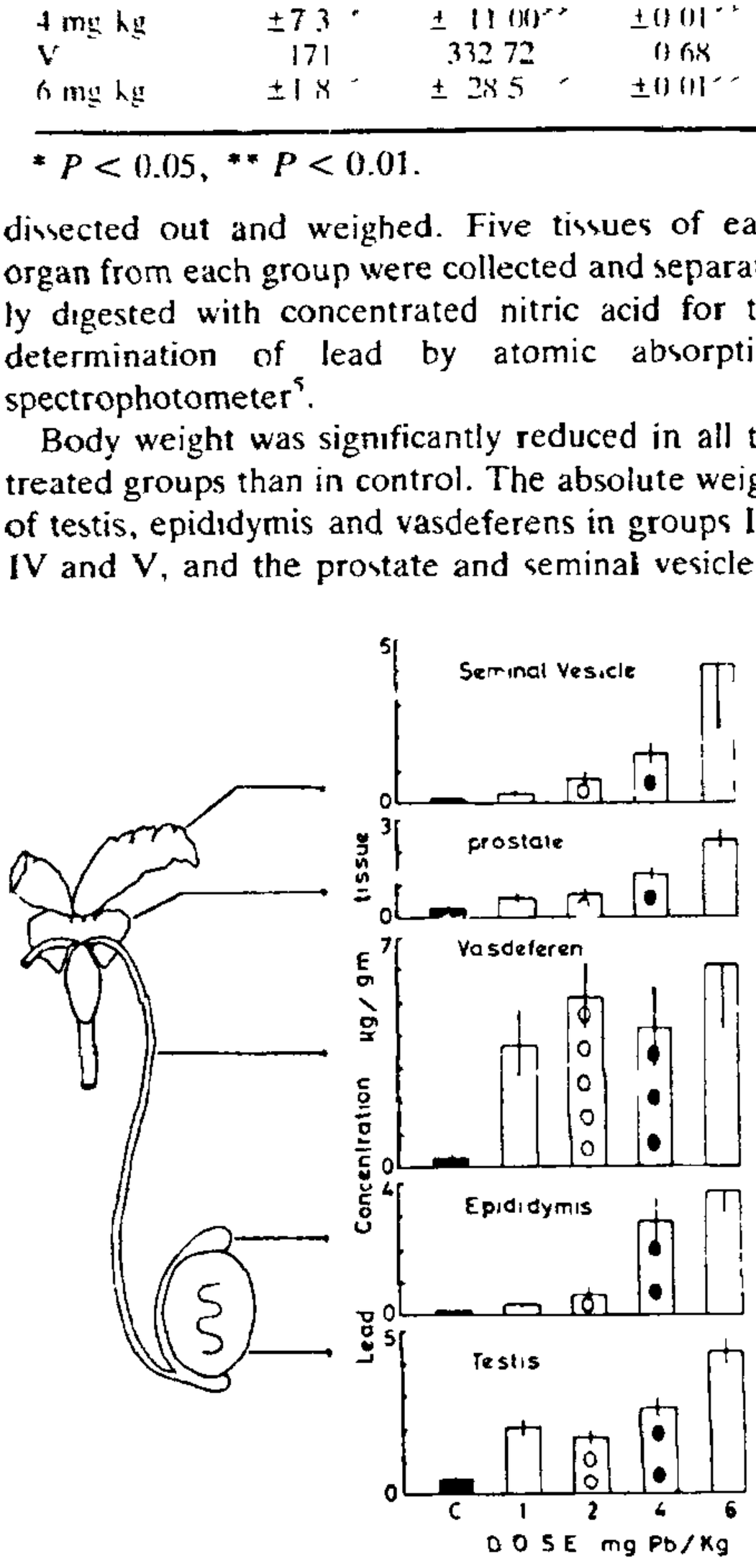

Figure 1. Accumulation of lead in reproductive organs of male rats treated with different dosages of lead acetate

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