

hypothesis that pGI would indeed be involved in depression of gastric blood flow (Figure).

Immunoassayable G, on the other hand, tends to decline during stress (control vs stress, Table) but increases markedly after adrenalectomy. In the light of greater sensitivity of adrenalectomized rats to ulcerogenic factors, it would be of interest to discover whether there is a feed-back mechanism not yet described between gastrin(s) and substances derived from the adrenals. As indicated by serum calcium in the intact and sham-operated groups during stress, it seems to us that a hypocalcemic principle is likely to be stimulated from normal adrenals to enter general circulation and suppress activity of gastrin(s) production sites<sup>13</sup>. Although earlier work by KAPLAN et al.<sup>14,15</sup> suggested a role for the adrenals in calcium homeostasis, our present report is, we believe the first to deal with a functionally related

trials of findings leading to gastric ulcers originally induced by stress situations: hyperglucagonemia, hypocalcemia and reduced gastric mucosal blood supply.

Further experiments are under way to elucidate the pathophysiological validity of each single parameter, with special respect to actual plasma gastrin(s). In addition, they may help to find out what kind of therapy should be envisaged in the presence of stress ulcer in humans.

**Zusammenfassung.** Unter Zwangshaltung entwickeln intakte, scheinoperierte und adrenaletomierte Ratten eine Drosselung der Magenperfusion und unterschiedlich häufig Nekrosen und Erosionen in der Magenmukosa. Dieses Phänomen ist von einem erheblichen Anstieg an Pankreasglucagon begleitet, während Gastrin unter Stress eher abfällt.

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<sup>16</sup> Acknowledgment. We are gratefully indebted to K. SCHWILLE, A. WELLMANN and G. BESOLD for skillful technical assistance.

## Action of L-Dopa on the Gonads of Male Rats

Melatonin (5-methoxy-N-acetyltryptamine) is a hormone secreted by the pineal gland (LERNER<sup>1</sup>), which has a decolorant action on the skin of amphibians<sup>1</sup>, an anti-gonadotrophic action (WURTMAN et al.<sup>2</sup>), a hypothermic action (BARCHAS et al.<sup>3</sup>), and a hypnotic action (MARCZYNSKI<sup>4</sup>). It has been shown that L-Dopa produces an increase of melatonin secretion by the pineal gland (WURTMAN et al.<sup>5</sup>). In this paper, we have tried to study the effect of the administration of L-Dopa on the gonads of male rats.

**Materials and methods.** 39 male rats, Wistar strain, 200–250 g, were used; 300 mg/kg of L-Dopa hydrochloride were administered s.c. to a group of 20 rats, 3 times a week for 1 month. Another group of 19 rats was used as control; these rats received distilled water on the same days and by the same route. After 30 days, the rats were killed and their testicles, seminal vesicles and prostate removed. The calculation of results was made using Student's *t*-test.

**Results.** The administration of L-Dopa to male rats diminished the weight of testicles, seminal vesicles and prostate (Table).

**Discussion.** WURTMAN et al.<sup>2,5</sup> demonstrated the inhibitory action of melatonin on the growth and weight of sexual organs of rats and hamsters. RABADÁN<sup>6</sup> has also observed an inhibitory action of melatonin on the weight of prostate, seminal vesicles and ovaries of rats. The results obtained appear to be due to the action of L-Dopa on the pineal gland, as WURTMAN et al.<sup>7</sup> have demonstrated that s.c. administration of 300 mg/kg of L-Dopa to rats produces an increase of the melatonin contents in the pineal gland. The increase of level of melatonin would be responsible of the decreased weight of testicles, seminal vesicles and prostates.

**Resumen.** La administración de 300 mg/kg L-Dopa, a ratas machos, por vía subcutánea, tres días a la semana durante un mes, produce una disminución significativa – del peso de testículos, vesículas seminales y próstata.

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Action of L-Dopa on the weight of sexual organs of male rats

Treatment	Testicles (each)	Prostate	Seminal vesicles <sup>a</sup>
Control	1637.73 ± 40.825	136.105 ± 10.55	281 ± 17.431
L-Dopa	1418.6 ± 43.973 ( <i>p</i> < 0.001)	92.2 ± 5.826 ( <i>p</i> < 0.005)	229.3 ± 12.276 ( <i>p</i> < 0.01)

<sup>a</sup> Mean values in mg ± S.E.M. The figures in brackets show the statistical significance.

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