and control animals. In the field, on the other hand, because climatic factors are more complex and variable and thermal range available is so much greater, the differential is not sufficiently magnified to bring about a clear dissimilarity in histology of the thyroid of parietalectomized and sham-operated lizards. A possible explanation for the similarity in thyroids of experimental and control lizards collected in summer might be a masking of the differential by the endocrine interplay incident to reproduction.

Summary. 1. Parietalectomized lizards (*Sceloporus occidentalis*), free living in the field, presented evidence of above-normal thyroid activity in animals collected in winter and spring, but not in summer. 2. An annual cycle of thyroid activity is exhibited by both parietalectomized and sham-operated lizards. 3. Thyroid hypertrophy induced by 3 weeks of constant temperature (35°C) is mediated by the hypophysis.

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Cytomegalic Inclusion Disease of Lacrimal Glands in Male Laboratory Rats.* (24868)

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This paper reports the presence of cytomegalic inclusion disease in intraorbital and exorbital lacrimal glands of laboratory rats. This condition was observed in adult males of 8 laboratory colonies but was not seen in any females nor in wild urban or rural Norway rats.

Methods. For recent toxicological study (unpublished) several hundred adult male Sprague-Dawley rats were purchased from a Midwestern firm. Routine histological survey of tissues from head and neck showed invasion by cytomegalic inclusion disease. Certain distinctive features described by Wyatt (1) as essential to complete a morphological diagnosis were satisfied, namely, eosinophilic intranuclear inclusion bodies, margination of nuclear chromatin, and specific cellular gigantism. Basophilic cytoplasmic inclusions were not observed. To procure normal lacrimal tissue, 6 adult male rats from each strain of Naval Medical Research Inst. stock, *i.e.*, Long-Evans, Sprague-Dawley, and NMRI-Dental caries-susceptible, were selected at random and lacrimal glands prepared for histological examination. All strains showed extensive lacrimal involvement by inclusion disease. All other organ systems were free of any cytomegalic inclusion disease. Sample male rats, 4 to each group, were procured from 4 other laboratory colonies in various geographic locations in U.S. Inclusion disease was present in all lacrimal glands, although variations in inclusion morphology and severity of the lesion were observed. These findings will be reported later. A group of wild urban male and 6 rural Norway rats, trapped in the Baltimore area, were free of lacrimal involvement. However, urban rats possessed intranuclear inclusions within kidney tubular cells, similar to the condition previously reported by Hindle(2). Salivary gland virus disease as described by Kuttner (3) and Smith(4) was present in acinar epithelium of submandibular glands and in ductular cells of sublingual glands of farm rats.

Results. Sample male and female rats of

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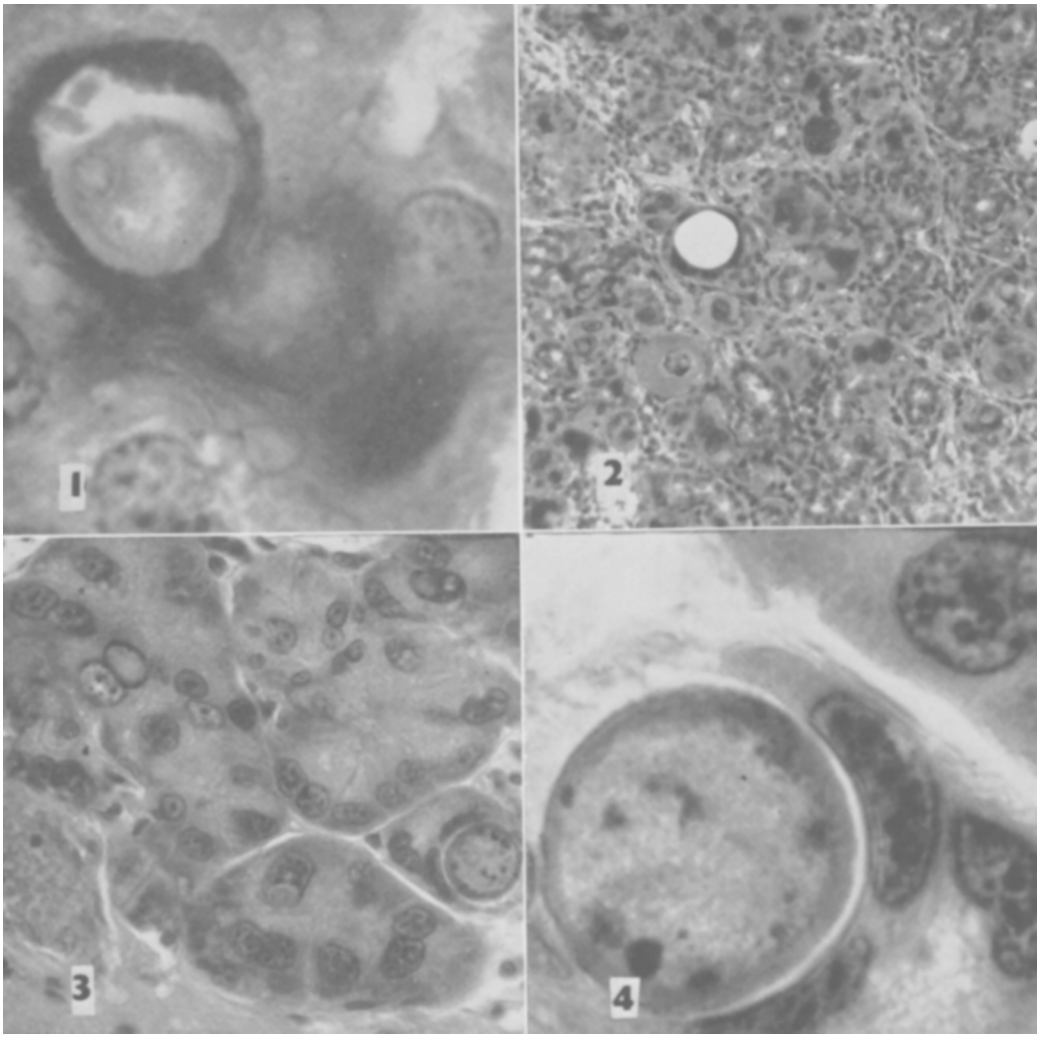

FIG. 1. Cytomegalic inclusion disease in exorbital lacrimal gland. Note diagnostic intranuclear acidophilic inclusion body with typical halo and margination of nuclear chromatin. NMRI "D" strain, 350-day male. 800 ×.

FIG. 2. Cytomegalic inclusion disease involving intraorbital lacrimal gland of a 350-day-old male, NMRI-D caries susceptible strain showing bizarre changes in acinar morphology. × 190.

FIG. 3. Atypical inclusion morphology in exorbital lacrimal gland of 250-day-old Sprague-Dawley male rat. × 250.

FIG. 4. Enlarged eosinophilic inclusion body 23 μ in diameter enclosed by cytomegalic ductular cells. Note compression of adjacent nuclei. Oil immersion, 800 ×.

NMRI-D strain were examined at 50-day intervals starting at birth, to record progressive changes in lacrimal pathology during disease. A typical diagnostic eosinophilic intranuclear inclusion body is shown in Fig. 1. In Fig. 2, progressive characteristic cellular changes are recorded from intraorbital lacrimal gland of a 350-day-old male. Affected acinar cells exhibit marked pleomorphism and subsequent cytomegaly. Bizarre nuclear patterns, namely, asymmetrical multipolar mitotic figures, syncytial masses, and giant hyperchromatic club-shaped nuclei containing one to 4 eosinophilic inclusions, simulate neoplastic morphology. The interstitial tissue shows an apparent increase in stromal cells and lymphocytic infiltration. Both intraorbital and exorbital lacrimal glands exhibited the same apparent de-

gree of involvement. In 450- and 500-day-old males, much of the degenerated lacrimal acinar tissue had been replaced by sebaceous type acini similar in morphology to the Harderian gland. The presence of intranuclear inclusions and subsequent bizarre cellular activity was not observed in any females regardless of age.

Many atypical inclusion bodies (Fig. 3) were observed in 200-day Sprague-Dawley males. The spherical eosinophilic mass shown in Fig. 4 appears to be a giant pleomorphic inclusion body measuring 23 μ diameter.

Although the significance of the disease and method of treatment are not known, it would seem essential that frequency of occurrence in other laboratory strains from different geographic locations be determined.

Summary. Cytomegalic inclusion disease of intraorbital and exorbital lacrimal glands was observed in adult male rats from 8 laboratory colonies but was not seen in any females nor in wild urban or rural Norway rats. Affected acinar cells showed characteristic eosinophilic intranuclear inclusion bodies and subsequent cytomegaly. Bizarre nuclear patterns simulated neoplastic morphology in late stages of the disease.

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Lack of Correlation Between Adrenal Weight and Injury in Grouped Male Albino Mice.* (24869)

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Grouping previously segregated mice results in adrenal hypertrophy which is least in dominant animals and greatest in most subordinate animals(1). Adrenal hypertrophy also occurs in freely growing populations of house mice, although fighting may be rare in these populations(2). Apparently neither fighting nor injury accounts for the adrenal hypertrophy(3). Although this belief has not been tested critically, it resulted from 2 types of observation: (a) adrenal hypertrophy apparently occurs in populations without fighting as well as in those with fighting, and (b) dominant animals usually fight more than subordinate animals. However, evidence has not been presented eliminating the possibility that injury from fighting could account for adrenocortical hypertrophy. This paper presents data showing lack of relationship between injury from fighting and adrenal weight in grouped male mice.

* Opinions expressed in this article are those of the author and not necessarily those of the Navy.

Methods. These data on adrenal weight and scarring were collected from experiments exploring relationship between adrenal weight and population density. All data are from grouped mice whose adrenals averaged 8 to 10% heavier than those of their segregated controls. These comparisons between adrenal weights of grouped and segregated mice are discussed in detail elsewhere(3,4,5,6,unpubl.). The data for each group of means or for each Table represent a collection of homogeneous data with respect to treatment, experiment, and time. Albino male mice from Naval Medical Research Inst. colony were used. Procedure was similar for each experiment and no groups were subjected to experimental procedures other than grouping. Male mice were segregated at weaning and for 3 weeks thereafter then were grouped by different sizes for 1 week, then autopsied, and severity of scarring recorded for each mouse. In some experiments scarring was recorded as absent, few scars, or severely scarred, while in other