TABLE 1

Compound	Relative R_F
Androstanedione 3,17	0.25
Δ^4Androstenedione 3,17	0.385
Androsterone	0.420
Isoandrosterone	0.527
Dehydroisoandrosterone	0.60
Testosterone	0.64

have not attributed great significance to their absolute magnitudes. Instead we have calculated the R_F values of the steroids relative to the slowest moving steroid in our series, androstanedione 3, 17. Since this compound has an average R_F in the neighborhood of 0.25, we have fixed this value as a "standard." Every mixture analyzed contained androstanedione 3, 17. The R_F values of the other components of the mixture were calculated relative to the distance that the "standard" substance had moved. At least 5 different determinations of the relative R_F values were made with each steroid in the series. The average relative R_F values are recorded in Table 1. Variation of the relative R_F values from the average for any one particular compound did not exceed ±4%.

Efforts are now being made to investigate the quantitative aspects of this method.

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The Alarm Reaction and the Hibernating Gland

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The alarm reaction (*1*) appears, among other things, as an enlargement of the adrenal cortex, rapid increase of the adrenocorticotropic hormone secretion of the pituitary gland and corticosterone secretion of the adrenals, etc. Selye and Timiras (*2*) have found that in rats, coincident with the lipid discharge of the adrenal cortex, reduetion in the sudanophile element of the brown fat tissue takes place. The alarm reaction was brought about by keeping piebald female rats in hunger and cold for 16 hr. Reduction in the lipids of the adrenal cortex and peptic ulcer showed that the alarm reaction had really taken place in them.

In animals that hibernate a special adipose tissue, the brown fat tissue, is found, which is called the hibernating gland (*3*). It is a bilateral formation which extends over the neck, axillary region, and anterior part of the back. Its lobes extend to the mediastinum and diaphragm and surround the large blood vessels of the thoracic cavity.

Using the method of Selye and Timiras (from information in a personal communication from P. S. Timiras, Montreal), we have investigated the hibernating gland of the hedgehog (*Erinaceus europaeus*) in the summer (5 animals, July), during hibernation (5 animals, January, after 3 months' sleep), and in animals spontaneously awakened in captivity from hibernation in May (5 animals, killed immediately after awakening). Immediately after killing the animal, the brown fat tissue was fixed in Bouin's fluid for at least 48 hr. After this it was sectioned with a freezing microtome, and the sections stained with Sudan IV and put into glycerol, where they were examined with the microscope.

The hibernating gland was most intensely stained with Sudan in the summer hedgehog; staining was weakest in the just awakened hedgehog. In hibernating hedgehogs the stainability lay approximately halfway between the two extremes. The stronger the stainability, the more sudanophile substance occurs in the hibernating gland.

The size of the sudanophile particles in the hibernating gland was greatest in the summer hedgehog, smallest in the just awakened animal. In the hibernating hedgehog it was again intermediate between the two.

We find that in the hedgehog in hibernation, and especially in the animal awakened from it, one of the phenomena typical of the alarm reaction described by Selye and Timiras has taken place: reduction in number and size of the sudanophile particles in the brown fat tissue. Judging from this, the awakening of the hedgehog from hibernation (*4*) is such a great physiological strain that it induces an alarm reaction.

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A Method for Dissection and Electrical Study *in Vitro* of Mammalian Central Nervous Tissue[1]

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Dissection of the spinal cord in the living cat has been found to be a simple and reproducible procedure if the piarachnoid membrane is first carefully re-

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