Among the many treatments suggested for malignant disease, one of the most recent is the administration of suprarenal gland. Thus Sokoloff has recently described the absorption of animal tumors following injection into them of a preparation of suprarenal cortex combined with an iron salt through which the gland was assumed to direct metabolism. Arloing, Josserand, and Charachon noticed some delay in the growth of a mouse carcinoma after the subcutaneous introduction of suprarenal from a rabbit prepared by inoculations of the same tumor; they found a glycerinated extract equally effective, whereas the normal gland was inert, whether extracted or not. These authors, also, referred the activity of the gland to its cortex. Coffey and Humber, finally, have alleged that necrosis of malignant tumors in man occurs after treatment with an extract of suprarenal from the sheep, but regarded their work as still in the experimental stage and their results as inconclusive, though promising. The critical reader, however, will find little to justify such optimism.

Of the three sets of experiments just referred to, those of Arloing and his associates lend themselves most readily to repetition, since, in the first place, they are concerned with animal tumors, and, in the second, the authors wisely introduced their extract at a distance from the tumor. Experiments in which the neoplasm itself is injected do not seem to the writer worth repetition.

As the French authors did not furnish explicit directions in their earlier papers, one who wished to repeat the experiment could do no more than imitate their procedure as best he could in the absence of exact instructions. Fortunately, the method employed by the present writer did not differ much from that finally published by Arloing and his colleagues, and in any case the discrepancy could have been of no practical importance.

Two widely known mouse tumors were treated—carcinoma 63 and sarcoma 180, the latter having been included solely for com-

---

1 A preliminary account of this work appeared in the J. A. M. A. 95: 473, 1930.
pleteness, for the French authors definitely limited their conclusions to an epithelial growth. Twenty-seven tumor-bearing mice were given suprarenal from rabbits previously treated with the tumor strain which these mice bore, while twenty-five others received suprarenal gland from normal rabbits. The material was introduced subcutaneously at a distance from the tumor, in the dose and at the intervals prescribed by the French authors, and in the form either of intact fragments or glycerin extract.

Although it had been planned to repeat their experiments on a rather large scale, it soon became apparent that the treatment contained no promise of success, and the work was accordingly abandoned. No delay in growth could be discovered, though it should be borne in mind that this statement applies only to the two neoplasms used. It may very well be that an occasional tumor could be found as susceptible as that employed by Arloing and his associates, but a treatment so narrowly restricted as this would hardly be a promising subject for extensive inquiry.

The chart shows the sort of result obtained with carcinoma 63. The mice whose tumors are reproduced in the first two columns
were treated from the fifteenth day onward with suprarenal extract, those of Column I receiving the gland from treated rabbits and those of Column II a similar preparation of the suprarenals of normal rabbits, while Column III contains the untreated controls. It requires but a glance to see that the treatment was entirely without effect, and intact grafts proved equally disappointing.

The outcome is confirmed by the experience of Flörecken and of Sugiura with transplanted tumors, of Itami and McDonald with spontaneous new growths of the mouse, and of Bischoff and Maxwell with a rat sarcoma. The authors last named tested 8 adrenal extracts, including the preparation of Coffey and Humber, but found them all ineffective. All this being so, the treatment of human patients with preparations of the suprarenal gland becomes an idle and indefensible experiment.

CONCLUSION

The suprarenal glands of rabbits that have been inoculated with carcinoma 63 or sarcoma 180 have no demonstrable inhibitory effect upon the growth of these tumors in mice.

BIBLIOGRAPHY


