

none was detected, and the use of the eruption of the rat tooth as a method of standardizing the thyrotropic hormone was shown to be of no value.

*Summary.* (1) The rate of the incisor teeth eruption in newborn rats is markedly accelerated by thyroxine; time of eruption varying with the dosage used. (2) The use of this observation as a method of standardizing the thyrotropic hormone was unsuccessful.

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#### Specificity of Graminae Pollens as Evidenced by Precipitin Reactions.\*

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Caulfeild<sup>1</sup> reported that guinea pigs can easily be sensitized with extracts of ragweed pollen precipitated with alum. During the last year we have produced hypersensitivity in guinea pigs with extracts of graminae pollens precipitated with alum and have demonstrated this state of hypersensitivity by the production of varying degrees of typical anaphylactic shock 3 to 5 weeks after sensitization of such animals.

In this paper we wish to report the results of specific precipitin tests of sera of such sensitized guinea pigs to extracts of their specific antigen pollens as well as to extracts of various other graminae pollens.

Pollen extracts were made according to Caulfeild's methods.<sup>1</sup> Groups of 5 guinea pigs each were sensitized with freshly prepared extracts of each of the following pollens: *Lolium perenne* (English rye grass), *Avena fatua* (wild oats), and *Bromus carinatus* (brome grass). In addition 3 animals were sensitized to *Cynodon dactylon* (Bermuda grass). One cc of extract was injected subcutaneously on 2 successive days to produce sensitization.† Anti-sera were ob-

\* The authors thank Dr. Leonard Ginzton for suggestions given concerning experimental technic.

<sup>1</sup> Caulfeild, A. H. W., *J. Allergy*, 1936, 7, 451.

† The use of 2.5 cc or 5.0 cc of the same extract in one injection sensitized guinea pigs as well or possibly better in Caulfeild's experiments.



tained from the sensitized guinea pigs 4-5 weeks after the last preparatory injection of antigen.

Precipitin tests were executed with 5% freshly prepared alum-free pollen extract; the sera obtained from the sensitized guinea pigs were overlaid with the antigen, incubated and observed during a one-hour period.

The results as recorded in Table I show that the sera contained precipitins only for the specific grass pollen antigens with which the guinea pigs were sensitized and not for other gramineae pollen extracts tested. The findings concerning the specificity of the precipitin reactions of gramineae pollens agree with those of Parker<sup>2</sup> and Cromwell and Moore;<sup>3</sup> they also lend support to the clinical observations reported by Watson and Kibler,<sup>4</sup> Bernton,<sup>5</sup> Loeb and Petow,<sup>6</sup> Piness and Miller,<sup>7</sup> Rackemann and Smith,<sup>8</sup> Benjamins,<sup>9</sup> and Grubb and Vaughan<sup>10</sup> that desensitization with specific pollens is necessary to produce the best results.

*Conclusions.* 1. Sera of guinea pigs sensitized with extracts of certain gramineae pollens contained specific precipitins only for the antigen used. 2. The antigen structure of gramineae pollens appears to be specific. 3. These experiments justify the use of a specific pollen therapy.

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<sup>2</sup> Parker, J. T., *J. Immunology*, 1924, **9**, 515.

<sup>3</sup> Cromwell, H. W., and Moore, M. B., *J. Allergy*, 1933, **4**, 347.

<sup>4</sup> Watson, S. H., and Kibler, C. S., *J. A. M. A.*, 1922, **78**, 719.

<sup>5</sup> Bernton, H. S., *J. A. M. A.*, 1924, **82**, 1434.

<sup>6</sup> Loeb, L. F., and Petow, H., *Klin. Wchnschr.*, 1937, **6**, 57.

<sup>7</sup> Piness, G., and Miller, H., *J. Allergy*, 1930, **1**, 483.

<sup>8</sup> Rackemann, F. H., and Smith, L. B., *J. Allergy*, 1931, **2**, 364.

<sup>9</sup> Benjamins, C. E., *Z. f. Hals-, Nasen-, u. Ohrenh.*, 1933, **33**, 153.

<sup>10</sup> Grubb, G. D., and Vaughan, W. T., *J. Allergy*, 1938, **9**, 211.