Observations on adrenalectomized marmots are in some respects similar to the above. Prolonged survivals (average 70 days in 12 cases) occur when the adrenal glands are removed in the months from October to March, and very short survivals (average 5 days in 19 cases) are observed in summer.[2] All animals which are adrenalectomized in winter survive until spring, however, when they die with the usual symptoms of insufficiency. Early winter-operated individuals thus show much longer survival times than others. Five marmots adrenalectomized in November and December, for example, showed survivals which averaged 98 days, while 5 operated on in February and March averaged only 44 days. No comparable winter-month variations in survival have been observed after nephrectomy. There is apparently a definite survival limit of about 4 weeks for winter-nephrectomized marmots, while that for adrenalectomized animals may vary from 5 to 20 weeks according to the time of operation.

It is emphasized that the marmot does not hibernate under ordinary laboratory conditions which are kept fairly constant throughout the year. Body temperature, feeding habits and general activity are normally maintained in winter as in summer, and the body weight is frequently increased. Winter-nephrectomized (or adrenalectomized) marmots are indistinguishable from normal unoperated animals until within a few hours of death. The remarkably long survivals recorded above are probably not referable, therefore, to any reduction in metabolic activities. The dispensability of renal and adrenal functions for very prolonged periods in the marmot is well demonstrated.

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THE BLACK WIDOW SPIDER IN VIRGINIA

RECENTLY, several articles on the distribution of the black widow spider, *Latrodectus mactans*, have appeared in SCIENCE. In Lowrie's contribution[1] the statement is made that there now are " . . . only eight states (Minnesota, Iowa, Virginia, Delaware, New Jersey, Connecticut, Rhode Island, Vermont) in which the spider has not been officially recorded." If by "officially recorded," publication in a scientific periodical is meant, this statement is at variance with one in an article by D'Amour, Becker and Van Riper,[2] who combine the distribution records of Burt[3] and Bogen[4] and remark that this " . . . leaves only the following states from which the black widow has not been reported: Oregon, Minnesota, Iowa, Missouri, Wisconsin, Illinois and Vermont." If Oregon, Wisconsin and Illinois, states in which *Latrodectus* has been reported recently,[5] are subtracted from this second list, then only Minnesota, Iowa, Missouri and Vermont are left. When comparison is made with Lowrie's list, they agree on just three states, in which the spider is unreported officially, *viz.*, Minnesota, Iowa and Vermont. By implication, the Lowrie list places the black widow in Missouri while, similarly, the D'Amour article places it in Virginia, Delaware, New Jersey, Connecticut and Rhode Island.

With respect to Virginia, it was rather surprising to find it said that there was no official record from this state, since the black widow is common to abundant in most of the state. There have been several articles on the effect of its bite in the *Virginia Medical Monthly* and the *Proceedings* of the Virginia Academy of Science for 1934–1935 lists a paper on *Latrodectus* read by Elizabeth Burger, then a graduate student in the Department of Biology, College of William and Mary. The synopsis of this paper includes "the incidence of arachnidism in Virginia." In her unpublished master's thesis, on file in the William and Mary library, Miss Burger tabulates 118 cases of Virginians who suffered the serious bite of this spider, the result being fatal in one instance, that of a two-year-old boy in Charlottesville. These data, gathered from a questionnaire sent to hospitals and physicians throughout the state, can not be considered as complete, and also occasional errors in diagnosis are possible, so that the real incidence might be somewhat higher. We are privileged to quote as follows:

> The majority of these cases were in Tidewater Virginia especially around Norfolk and Richmond, and on the Eastern Shore. Fifteen cases from Bristol show that the range of the black widow extends into the mountains in this state.
>
> A large proportion of these cases occurred since 1930. Most of the cases happened in the spring, summer or fall, during the natural breeding season of the spider. . . . The spiders were located in privies in 25 instances, in a garden four times, in bed in three cases, on the ground in three instances, and once each in a stump, baseball glove, bathing suit, tobacco sticks and on a porch. Most of the patients had seen the spider, which they described as "black like a shoe-button with a red spot."

In the vicinity of Williamsburg, specimens can be secured at any time merely by investigating such sites as under stones or bits of wood, along brick walls or

[2] S. W. Britton, *Amer. Jour. Physiol.*, 99: 9, 1931.

[1] Donald C. Lowrie, SCIENCE, 84: 2185, 437, November 13, 1936.

[2] F. E. D'Amour, F. E. Becker and W. Van Riper, *Quart. Rev. Biol.*, 11: 2, 123, June, 1936.

[3] C. E. Burt, *Jour. Kans. Ent. Soc.*, 8: 4, 117, 1935 (cited by Lowrie).

[4] Emil Bogen, *Ann. Internal Medicine*, 6: 375, 1932.

[5] H. M. Field, SCIENCE, 83: 2147, 186, February 21, 1936, and L. H. Townsend, SCIENCE, 84: 2183, 392, October 30, 1936 (both cited by Lowrie).

foundations at the ground level and on or under vegetation where the air is damp. One spring day, Miss Burger and the writer took 50 individuals of varying stages from the stones of a rock-banded curbing 35 × 2 feet in area. Six months later, the identical site yielded five mature females, one mature male and two immature females. A pile of scattered fenceposts left lying in a field in April had from one to six mature females under each post in October.

In the fall of 1935, an undergraduate in one of the writer's classes was bitten on the hand upon retrieving a tennis ball. Apparently in the very short interval of time the ball lay in the grass outside of the court, a female black widow clung to it and then inflicted the bite as it was picked up. This student's symptoms were typical: The sensation of a pin prick, pain increasing in intensity and localizing in the lower torso, a marked rigidity of the abdominal muscles and prostration. In spite of opiates and other measures, pain, so intense that a wooden gag was necessary, was experienced for about two days. Apparently this case is the first time a student has been bitten while in residence, though the spiders are seen on nearly every collecting trip. In the Elementary Biology Laboratory, one or more *Latrodectus* cultures are kept going most of the year and all students in field courses are warned to respect this dangerous arachnid.

From his personal experience, the writer has concluded that (1) the black widow is abundant in Tidewater Virginia, (2) it is unlikely to inflict its poisonous bite unless handled, and far from invariably then, and (3) its bite is so serious, especially to children, that reasonable caution should be observed when poking into situations where it is likely to be.

It may be relevant to conclude this account with a true and rather amusing anecdote. Some Williamsburg children, sons and daughters of professors as well as colored children, are in the habit of collecting insects and spiders and selling them to biology students for one cent each. One little colored boy discovered purveying black widows at this price was told of the dangerous character of such merchandise. A few days later he was found still selling black widows—but his price had jumped to a nickel each.

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THE ADSORPTION-ABSORPTION AND TRANSLOCATION OF DERRIS CONSTITUENTS IN BEAN PLANTS

OBSERVATIONS in field work in which derris and cube were used as insecticides showed possibility of the constituents of these roots being adsorbed-absorbed and translocated to new growth of the treated plants.

Two varieties of beans (Pinto and Burpee Stringless Green-pod), grown in pots under greenhouse conditions, were treated before the first trifoliate leaves appeared with suspensions of derris in water, containing 0.025, 0.05 and 0.25 per cent. rotenone. Some of the plants were treated by spraying the entire plant with a compressed-air hand sprayer, some by painting only the first pair of true leaves and some by painting only the stems.

As soon after treatment as the first trifoliate leaves had attained a fair size or about the time the second trifoliate leaves were opening, the first trifoliate leaves were removed from the plants and used for tests. Larvae of the Mexican bean beetle (*Epilachna varivestis* Muls.), confined in open glass cells, were allowed to feed on these leaves and the leaf areas consumed were measured. There was very low mortality among the larvae feeding on the new growth from either the treated or the untreated plants. There was, however, a definite reduction in feeding area of new growth on treated plants over that on untreated plants. This reduction in feeding area was observed on the first, second and third trifoliate leaves.

Chloroform extracts were prepared from the same plants as those used for the feeding tests. These extracts were prepared for biological and chemical tests by evaporating to dryness and removing the residue with acetone. An aliquot of the acetone solutions was tested against goldfish (*Carassius auratus*) in water suspension, and 100 per cent. mortality was observed in every case. No mortality was observed in extracts prepared from untreated plants. Where sufficient leaf material was available, an aliquot was used for the colorimetric analysis.

The data accumulated thus far indicate that derris constituents are being adsorbed-absorbed and translocated to new growth of bean plants treated with a suspension of derris powder in water.

A more detailed paper will be presented elsewhere.

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THE SIXTH EDITION OF THE BIOGRAPHICAL DIRECTORY OF AMERICAN MEN OF SCIENCE

A NEW edition of "American Men of Science" is now in preparation. It should be ready in about a year, the present plan being to issue the work once in five years. The fifth edition was published in March, 1933; the dates of publication of the earlier editions were 1906, 1910, 1921 and 1927, one edition having been omitted owing to war conditions. The number of