In attempts to feed adult ticks at the laboratory, it has been found that a similar edema is produced on guinea pigs so that it is impracticable to use these animals as hosts.

Bites by this tick are often characterized by the formation of slow-healing ulcers at the site of the feeding puncture. These abscesses are usually suppurative and may persist as long as eighteen months, being very resistant to medical treatment. Even though it is probable that the detached mouth parts are responsible in the beginning for some of these ulcers, the severity of the following condition is much greater than might be expected merely from the introduction of a foreign body of the size of tick mouth parts, structures less than half a millimeter in length. Obviously the accompanying toxic irritant plays an important part in preventing, or at least delaying, the healing of bites.

It has been demonstrated at this Laboratory on a number of occasions that the two earlier stages of this tick, the seed or larvae and the nymph, are also poisonous to their hosts. As a rule, the larval progeny of a single tick will kill an adult guinea pig within five days of the infestation, while as few as seventy nymphs have killed one, though they succeeded in engorging only partially before the death of the host. Inoculations of the crushed ticks and the blood of the dead animals into fresh pigs have failed to produce any abnormal symptoms. In spite of the marked susceptibility of guinea pigs to the toxin of *I. californicus*, there are at present indications that an immunity is built up in the survivors of the initial infestations.

A SIMPLE METHOD OF ADDING OR CHANGING PRESERVATIVE LIQUIDS IN SEALED VIALS WITHOUT REMOVING THE CORKS*

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Collections of insects or other material kept in preserving liquid in glass vials are a constant source of worry to the curator. This is particularly so when a volatile fluid such as alcohol is used.

The author has a collection of British Columbia dragonflies preserved in 95% grain alcohol and contained in about 2,000 glass vials. Homeopathic vials of several lengths with extra wide (16 mm.) mouths are used so that even the largest species are easily inserted or removed without injury. Short corks of good grade are best, the corks and necks being dipped several times in liquid wax. Other ways of preventing evaporation were tried but all had disadvantages of one sort or another and the waxed-cork method was adopted.

A dragonfly is an elongated insect, and there is not much space left between its head and the base of the cork in the vial. Therefore very little evaporation need take place before the insect's head and thorax becomes exposed to the air, making it desirable to add more alcohol. Examination of

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the collection each winter always shows many vials needing alcohol. In past years the corks from these vials were replaced by new ones and the tops of the vials again waxed; old corks, soaked with alcohol and greasy with wax, refuse to stay in place. This annual replacement of corks is tedious and expensive.

The use of a hypodermic syringe was found to completely overcome all the difficulties previously experienced; alcohol may be added without the removal of a single cork or the breaking of the coating of wax or other material used to prevent evaporation. A cheap hypodermic syringe of the type having a conical glass point fitting without screw or locking device into the funnel-shaped cavity in the heavy base block of the needle, has proved to be best. Needles of No. 20 gauge and one and three-quarter inches in length are ideal.

With this equipment proceed as follows: Place a rack of vials in front of the operator, in a tray. Detach the needle from the syringe and with the thumb on the base block push the needle through the cork. Run the gauge wire, one end of which has been inserted into a cork to facilitate handling, down through the hollow needle to clear any wax or cork which may have entered. Suck up some alcohol from a beaker or similar receptacle with the syringe; place its conical glass tip in the hole in the base block of the needle and press down on the plunger with the thumb. The alcohol will then flow into the vial. The plunger should be lightly coated with vasoline occasionally to keep it airtight. As soon as resistance is felt on the plunger, due to air pressure within the vial, allow it to spring back and the compressed air will escape. The needle should be kept above the level of the liquid in the vial, else the air pressure may force the cork out. A few downward strokes of the plunger will add 5 to 10 cc. to the vial in a matter of seconds. When the correct amount of alcohol is in the vial, lift off the syringe and pull out the needle with your fingers. The elasticity of the cork will fill up the hole made by the needle, and the small hole in the wax covering the cork can be sealed by the use of a scalpel blade or similar object, warmed in a spirit flame if desired.

If it is necessary to extract fluid from a vial, the procedure is much the same except that the needle should only just clear the cork, the vial should be inverted, and the empty syringe attached *loosely* to the needle. Then by pulling down the plunger the fluid will begin to be sucked out. As soon as *any appreciable resistance* is felt, care must be taken to stop and loosen the syringe in the needle base to allow air to enter the vial through the needle. Then suck out some more fluid. It is much more important to allow air to enter the vial when extracting fluid than to allow it to escape when filling a vial. Too much air pressure when filling will merely pop out the cork, but when extracting fluid a vacuum is created inside the vial, and before the cork will be sucked in the walls of the vial will collapse; this may easily cause a seriously cut hand. A second hollow needle pushed through the cork, to act as an air vent, will overcome this difficulty. When the vial is empty, it can be refilled with fresh fluid as described above. Another use of the hypodermic needle is that it enables a corked vial to be completely filled,

leaving no air space. This cannot be done in the ordinary manner because of air resistance in the neck of the vial.

The method described above, possibly well known to many, has given the author a much kinder feeling towards collections in alcohol. It is hoped that it may prove of value to others, who may include among their duties the care of material preserved in liquids in sealed vials.

THE OCCURRENCE OF THE CLAY-COLOURED WEEVIL, (*Brachyrhinus singularis* (L)) IN BRITISH COLUMBIA (Coleoptera) *

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In April 1937 our attention was called to the severe damage to Portugal laurel growing adjacent to the horticulture building at the Exhibition grounds at Victoria, B. C. On examining the laurel trees, weevils unknown to the writer were found seriously injuring the foliage. Specimens were identified by Mr. W. J. Brown, Division of Entomology, Ottawa, as *Brachyrhinus singularis* (L), known in Britain as the "clay-coloured weevil." To our knowledge this is the first record of this weevil occurring as an economic pest in British Columbia.

The adult is a nocturnal, wingless beetle, oblong-oval in shape, 6 to 8 mm. long, and closely covered with brown and pale yellowish-brown scales, giving it a speckled appearance. Being frequently covered with particles of earth it is very difficult to detect on the soil, especially as it often feigns death when disturbed.

Early History in North America :— In correspondence with Mr. Brown, and from his recent paper in the Canadian Entomologist (2) we learned that the clay-coloured weevil was found in Canada as early as 1902 at Montreal, Que., and has since been collected at Lauzon, Que.; Guelph, Ont.; Yarmouth and Halifax Counties, N. S.; and Charlotte County, N. B. In the United States it occurs at Stoneham and Essex, Mass., the latter place being the first record for North America where it was reported under the name of *Brachyrhinus picipes* Fab. in 1872.

Host Plants and Distribution :— There are few published records of the occurrence of this species of weevil and it seems to be scarce or local in North America. The genus Brachyrhinus is distinctly European in origin and it is possible that in Canada the eastern and Victoria specimens are from separate introductions.

During the past four seasons this pest has been observed causing damage to a wide variety of plants, namely, roses, holly, campanula, iris, shasta daisy, viola, hyacinths and blackberry. In Europe, it is also considered to be an important pest of trees and small fruits. In England, Massee (4) and

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