and a white larva lying in a cavity possibly 1 cm. in diameter and situated entirely in the skin. No motion was observed in the larva.

The larva was sent to Washington where, through the courtesy of Professor C. W. Stiles, it was identified as "the larva of *Hypoderma lineata* in the second stage."

The patient reported under date of June 24, 1910, that he was quite well and had had no further trouble.

While there are probably other cases recorded I have found in the accessible literature but one somewhat similar case[4] in which a small lump wandered irregularly over the chest wall, arm and back finally, at the end of five months, arriving on the cheek where it suppurated and was lanced discharging a larva subsequently identified at Washington as the larva of *Hypoderma bovis*. This case occurred in McKean County, Pa.

Hypoderma lineata and *Hypoderma bovis*, the ox-warble flies, are parasites of cattle. According to Curtice[5] the eggs of the former are deposited on the hair of the animal, carried by licking into the mouth and esophagus, where they adhere until the development of the larvæ which burrow through the tissues of the neck arriving at the skin, whence they travel in the skin itself to the back of the animal thus doing permanent injury to the hide. Folsom states that in six months of 1889 *Hypoderma lineata* alone was responsible for a loss of more than three and a quarter million dollars of which almost seven hundred thousand dollars represented injury to the hides.

In the present instance, however, the egg seems to have been deposited in the skin about the left knee, from which point the larva immediately began its migration through the skin without penetrating the deeper tissues. Neither in this case nor in Kane's case were there any constitutional symptoms, the sole inconveniences having been pain and local reaction caused by the burrowing of the larva.

I wish to express my thanks to Professor W. S. Halsted through whose courtesy this case is reported and to Dr. Thomas R. Boggs as well as to Professor C. W. Stiles for identification of the larva.

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REVISED DIRECTIONS FOR MAKING AND USING THE WRIGHT BLOOD-STAIN *

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Reports of unsatisfactory results obtained by some workers with the blood-staining fluid which I devised a number of years ago, and recent personal experience with it, have made clear to me that the directions for its preparation and application should be revised in order that certain faults in its working may be corrected or prevented. It is believed that the revised directions which are here given will enable the multitude of users of this reagent to obtain by it brilliant staining effects with more certainty and constancy than heretofore.

PREPARATION OF THE STAINING FLUID

To a 0.5 per cent. aqueous solution of sodium bicarbonate add methylene blue (B. X. or "medicinally pure") in the proportion of 1 gm. of the dye to each 100 c.c. of the solution. Heat the mixture in a steam sterilizer at 100 C. for one full hour, counting the time after the sterilizer has become thoroughly heated. The mixture is to be contained in a flask, or flasks, of such size and shape that it forms a layer not more than 6 cm. deep. After heating, allow the mixture to cool, placing the flask in cold water if desired, and then filter it to remove the precipitate which has formed in it. It should, when cold, have a deep purple-red color when viewed in a thin layer by transmitted yellowish artificial light. It does not show this color while it is warm.

To each 100 c.c. of the filtered mixture add 500 c.c. of a 0.1 per cent. aqueous solution of "yellowish, water-soluble" eosin and mix thoroughly. Collect the abundant precipitate which immediately appears on a filter. When the precipitate is dry, dissolve it in methylic alcohol (Merck's "reagent") in the proportion of 0.1 gm. to 60 c.c. of the alcohol. In order to facilitate solution, the precipitate is to be rubbed up with the alcohol in a porcelain dish or mortar with a spatula or pestle.

This alcoholic solution of the precipitate is the staining fluid. It should be kept in a well-stoppered bottle because of the volatility of the alcohol. If it becomes too concentrated by evaporation and thus stains too deeply, or forms a precipitate on the blood-smear, the addition of a suitable quantity of methylic alcohol will quickly correct such faults. It does not undergo any spontaneous change other than that of concentration by evaporation, according to my personal experience.

A most important fault encountered in the working of some samples of this fluid is that it fails to stain the red blood-corpuscles a yellow or orange color, but stains them a blue color which can not readily be removed by washing with water. This fault I have recently discovered to be due to a peculiarity of the eosin employed. It can be eliminated by using a proper "yellowish, water-soluble" eosin. Such an eosin I have obtained from R. L. Emerson, 739 Boylston Street, Boston.

APPLICATION OF THE STAINING FLUID TO BLOOD-FILMS

1. Cover the film with a noted quantity of the staining fluid by means of a medicine dropper.

2. After one minute add to the staining fluid on the film the same quantity of distilled water by means of the medicine dropper and allow the mixture to remain for two or three minutes, according to the intensity of the staining desired. A longer period of staining may produce a precipitate. Eosinophilic granules are best brought out by a short period of staining.

The quantity of the diluted fluid on the preparation should not be so large that some of it runs off.

3. Wash the preparation in water for thirty seconds or until the thinner portions of the film become yellow or pink in color.

4. Dry and mount in balsam.

Films more than a few hours old do not stain as well as fresh ones.

95 Mountfort Street.

4. Kane: Insect Life, ii, 238.
5. Curtice: Insect Life, ii, 238.

*From the Pathological Laboratory, Massachusetts General Hospital.

Treatment of Diphtheria.—That our present method of treating diphtheria by antitoxic serum is defective is the contention of Sir Almroth E. Wright (*Proc. Roy. Soc. Med.*, October, 1910). Instead of adapting itself to the requirements of each individual case, it takes into consideration only the diphtheria bacillus and aims only at securing a high average of success. The method ignores the associated pathogenic organisms, such as the streptococcus, whose presence may involve almost as much danger to life as the diphtheria bacillus itself. The laboratory bacteriologist aims to produce a serum that will conform to accepted laboratory tests and achieve the highest possible antitoxic potency, leaving out of sight the fact that a diphtheric infection is something more than an intoxication by diphtheric poison.