As I have stated above, acid or alkaline solutions can cause considerable pain, while the neutral suspension is practically painless; but its absorption and effect is slower. The amount of pain and discomfort following an injection varies with different patients. In general, it is said that women seem to suffer less than men, and babies apparently have no pain even from a strongly alkaline solution. It has generally been found that on the second or third day after injection, there is a slight rise of temperature which abates again within a few hours, and a slight tenderness at the site of the injection.

It should be mentioned again that "606" is a powerful medicinal agent, and it should be used only after the various techniques have been thoroughly studied and mastered. It will never be a drug that can be used altogether in office practice like the frequent injections of the different mercurial salts; and the greatest caution must be exercised by those who use it, after it is given to the medical profession at large. An unattainable ideal would be to have the drug used only by trained genito-urinary specialists, just as a laparotomy is performed to-day only by a surgeon.

It is for this reason that Ehrlich has withheld the preparation from the general profession until many thousand cases have been recorded by competent and careful workers. The records of these cases will act as a bulwark against any future misuse of the drug by the incompetent.

Sandhofstrasse 44.

A CASE OF TORSION OF THE GREAT OMENTUM

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Although the case reports of torsion of the great omentum have greatly increased since the recognition of this condition has become more general, still it is of sufficient rarity to warrant the report of all cases, particularly of the intra-abdominal variety.

History.—R., male, aged 45, referred by Dr. W. V. C. Francis, with the following history: Appendectomy during an acute attack five years ago, with suppuration of the wound; since then the patient has had frequent attacks of abdominal pain of a colicky nature. July 22, 1910, an attack of unusual severity was followed by the formation of a tumor in the right iliac region which was tender to pressure. The temperature varied from normal to 101 F. The patient had not vomited. The bowels had moved daily. August 1, ten days after the commencement of his illness, the acute symptoms had subsided. He complained of little pain and appeared quite comfortable. The evening temperature was 100 F. The pulse was not accelerated. The abdominal walls were thick. There was no tympany nor rigidity. In the right iliac region, just lateral to a broad oblique scar, was a tumor about the size of a fist, slightly tender to touch and apparently superficial to the abdominal muscles. A diagnosis was made of strangulated epiplocele and operation suggested.

Operation and Findings.—The operation on August 3 revealed a mass of strangulated omentum about the size of a duck's egg, within a hernial sac, to which it was firmly adherent. The pedicle, two finger-breadths in thickness, was found continuous with a mass of matted and deeply congested omentum within the abdomen. This intra-abdominal mass was about the size of a goose-egg, firmly attached by old adhesions to the intestines, from which it was separated with difficulty. This mass was, in turn, attached by a pedicle the thickness of the thumb to the remainder of the great omentum. Both pedicles showed plainly the marks of torsion, and both omental masses the effects of venous obstruction. The strangulation

was more intense in the intra-hernial mass, but in neither was it sufficient to cause gangrene. The patient probably would have recovered from this attack, as he had from previous less severe ones, as evidenced by the dense adhesions of both masses. Both omental masses were removed and the hernial opening closed by overlapping. Recovery was uneventful.

Adhering to the classification suggested in my previous article,¹ this case belongs to the group of intra-hernial and intra-abdominal torsion about two points.

MYIASIS DERMATOSA DUE TO THE OX-WARBLE FLIES

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Myiasis dermatosa, or infection of the skin with the larval stage of dipterous insects, is fairly common in the tropics though less so in temperate zones, the infection in man most commonly being due to the screw-worm (*Comptosia macellaria*²) or to *Dermatobia hominis*.³ The following case of human infection due to *Hypoderma lineata*, one of the ox-warble flies and a parasite of cattle almost exclusively, merits report because of its rarity.

Patient.—H. S., a white boy, aged 11, of Roanoke, Va., was admitted to Johns Hopkins Hospital, Baltimore, March 13, 1908, complaining of "swelling under the chin." His family and personal history are negative.

Present Illness.—In December, 1907, the boy noticed a small round lump just below the left knee; this lump was slightly red and very tender especially at night. About two days later the lump had disappeared from the original position and was found some three inches above the knee; the following day it was still higher on the thigh and during successive days it appeared at different points along a course up the abdomen, under the axilla, over the scapula, up the right side of the neck, irregularly about the scalp, finally passing back of the ear and to the submental region which it reached about two months after its first appearance; there it remained stationary, tenderness and pain having meantime greatly decreased. During January, 1908, there appeared in the left groin a second similar lump about the size of a finger-nail. This lump followed a course up the abdomen, under the right axilla and up to the back of the neck, reaching the occipital region in about three weeks, at which time it "came to a head"; the patient picked the scab off and pulled out a "white worm about one inch long and as thick as a darning-needle," alive and moving. These lumps were occasionally stationary but generally migrated three to four inches a day. The pain was not extreme but, with the tenderness and a stinging sensation, was more pronounced at night. At times the lumps would increase to the "size of his two fists" and become very painful.

Physical Examination.—In the submental region was a superficial fluctuating mass 2 cm. in diameter about which there was but little induration or inflammatory reaction. The cervical and axillary glands were generally palpable but small. Hemoglobin 75 per cent. White blood cells 7,700.

Differential count:

Polymorphonuclear neutrophils	54	per cent.
Polymorphonuclear eosinophils	8	per cent.
Mononuclears	30	per cent.
Transitional cells	1.5	per cent.
Unclassified cells	3.5	per cent.
Pulse and temperature normal. Urine negative.		

March 13, under cocaine anesthesia, the submental mass was incised, disclosing a small amount of finely granular detritus

1. Torsion of the Great Omentum, THE JOURNAL A. M. A., May 11, 1907, p. 1590.
2. Stiles: Osler's Modern Medicine, 1, 637.
3. Adams, J. Lee: Tropical Cutaneous Myiasis in Man, THE JOURNAL A. M. A., April 9, 1904, p. 947.

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 case⁴ 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 Curtice⁵ 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.

4. Kane: Insect Life, II, 238.

5. Curtice: Insect Life, II, 238.

*From the Pathological Laboratory, Massachusetts General Hospital.

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.

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.