

struated once naturally at sixteen years of age, and, from that time until the age of fifty, she suffered from hæmoptysis regularly once each month. Accompanying the loss of blood were the usual uneasy sensations of pain in the pelvis and general malaise.

In slight cases of hæmoptysis the patient has first a tickling sensation, beneath the sternum, which compels him to cough. The effort brings up a warm fluid having a peculiar sweetish taste, which when expectorated is found to be blood. It is generally bright red, and filled with bubbles of air. At other times the sputa for some days are simply tinged or streaked with red. In more serious cases, and especially in heart-disease, there is a sharp, intense pain in some part of the chest, followed immediately by excessive dyspnoea, and the expectoration of large quantities of blood. This blood is not so bright as in the former instance, but it still contains air. On auscultation near the seat of extravasation, moist râles, and occasionally bronchial breathing, can be heard. The râles are more liquid in character than those produced by mucus. There is more or less dulness on percussion, in the majority of cases. These large extravasations are usually followed by pneumonia. Its advent is easily recognized by the characteristic physical signs, and by the increased temperature, rapid pulse, and other evidences of febrile excitement.

In examining a case of supposed hæmoptysis, it is well always to take into consideration the fears of the patient, when determining the quantity of blood lost. The fright causes the amount to be greatly exaggerated. Investigate carefully the condition of the nose, mouth, and fauces. Blood from these parts may get into the larynx, excite coughing,

and be expectorated, thus leading to an erroneous diagnosis. The differentiation between hæmoptysis and hæmatemesis is readily made. In the latter the blood is dark-colored, acid in reaction, uncoagulable, does not contain air, and is expelled by the act of vomiting. With it there is a history of some disorder of the stomach or liver. In the former the blood as a rule is red—it is alkaline in reaction, coagulable, filled with bubbles of air, is brought up by coughing, and there is a previous history of some variety of lung-disease (*see* Hæmatemesis).

Treatment.—The patient should be placed in a sitting posture in bed, propped up with pillows. A cool room is desirable. Every cause of excitement must be removed. The variety of medication demanded depends to a certain extent on the cause of the hæmorrhage. If it be due to cardiac disease, and if the heart's movements be accelerated, it will, of course, be expedient to administer an arterial sedative in conjunction with the astringent. For this purpose the following prescription will be found of service :

R. Ext. verat. viridis	fl. ʒ ss.
Ext. ergotæ	fl. ʒ ij.
Acidi sulph. aromat.	ʒ ij.
Aquæ	fl. ʒ ij. M.

Administered in 30-drop doses, largely diluted, every half-hour, until the desired effect is produced. Digitalis may be substituted for veratrum, or given separately. Great care must be exercised in its administration. For the urgent dyspnoea, which also accompanies this hæmorrhage in heart-disease, the application of half a dozen dry cups to the thorax will be found an admirable remedy. They relieve

the troublesome shortness of breath, and, by drawing blood to the surface, diminish the congestion of the lungs.

If there be no special contraindication, the following preparation of sugar of lead and opium, although incompatible, will often answer the purpose :

R. Plumbi acetatis ʒss.
Pulv. opii gr. ij. M.

Make ten pills. One to be given every half-hour. In simple cases, one of the oldest, and, at the same time, one of the best, remedies is common salt, alone or with vinegar. Half a teaspoonful can be given at intervals of fifteen minutes until the hæmorrhage is controlled.

R. Acidi sulph. dil. fl. ʒij.
Aluminis ʒj.
Aquæ fl. ʒij. M.

Can be taken in teaspoonful doses every half-hour. Some prefer the preparations of iron. Inhalation of the vapor of tr. ferri chloridi has been recommended, but its irritating properties would tend to excite coughing, and therefore should not be employed. Gallic acid in three-grain doses, and other vegetable astringents, are found efficacious. In connection with the internal remedies mentioned, hot applications to the dorsal region of the spinal column, and cold ones in front, will be of service. When all danger from loss of blood has passed away, the disease which produced it, and the inflammation (if any) which follows, should receive careful attention.

HÆMATURIA.—Blood in the urine is a symptom of many varied pathological conditions distinct in character and in

location. Having its origin in different organs some considerable distance apart, a correct appreciation of its source is attended with greater difficulty than are hæmorrhages from the viscera. Lesions in any part of the genito-urinary tract from the kidneys, ureter, bladder, prostate gland, or urethra, may bring on hæmaturia.

Constitutional blood-diseases, as purpura, scurvy, typhus or yellow fever, are classed as causes independent of special disorders in the organs mentioned.

Hæmorrhage from the kidneys arises from external violence, inflammation of the tubes or parenchyma of the organ; the passage of renal calculi, or ulceration resulting from the infarction of these bodies, in or near the pelvis. The passage of large calculi through the ureter tears the mucous membrane, and bleeding results.

Blood is found in the urine in injuries of the bladder from introduction of instruments or blows on the hypogastrium, acute cystitis, fungous degeneration of the mucous membrane, and cancerous disease of the organ. Urethritis, chordæ, and injuries of various kinds, are prolific causes of hæmorrhage from the urethra. Various medicinal agents, such as cantharides, turpentine, etc., etc., given in overdoses, produce excessive congestion in the genito-urinary tract which is often accompanied by hæmaturia.

When called to a case of supposed hæmaturia, it will be well first to determine whether blood is present in the urine or not, and then endeavor to discover its source. Healthy urine is a clear "amber-colored fluid," acid in reaction, and having a specific gravity ranging from 1.118 to 1.125. Urine which contains blood has a smoky tint, if the quantity be small; dark red or chocolate-brown, when the quan-

tity is large. The reaction in most cases is alkaline, and the specific gravity is increased. On being allowed to stand, a dark-reddish mass sinks to the bottom, while the supernatant fluid still maintains, to a certain extent, its smoky hue. Heating the liquid will give a cloudy precipitate of albumen, tinged with the coloring matters of the blood, while the rest of the urine remains clear. The surest method of diagnosis is by microscopical examination. Blood-corpuscles are recognized by their "yellow color, uniform size and non-granular surface" (*Bird*).

There are many substances besides blood which give a reddish color to the urine. An excess of urates in otherwise normal urine will induce a red or brown deposit when the liquid cools. To determine their presence apply heat, and the urine will resume its natural transparency.

The use of beet-root, madder, logwood, etc., also occasions a red color. The applications of heat in these cases will not produce a precipitate, showing that the tinge is not due to blood.

When the blood proceeds from the kidneys, it will be, generally, diffused throughout the urine. It will be attended with a history of injury, the passage of a calculus, or signs of nephritic inflammation. A microscopical investigation will show small blood-casts of the uriniferous tubules, red globules, and epithelium from the pelvis of the kidney. If the blood come from the commencement of the ureter, small plugs of fibrine, resembling maggots, may sometimes be seen in the bottom of the glass.

In hæmorrhage from the bladder, more blood comes away at the end of micturition than during the act; it is clotted, and not diffused through the liquid, as in the former

instance. There is a history of injury, signs of cystitis, such as frequent desire to micturate, pain during the act, and pain on pressure over the pubes, or signs of stone.

When the bleeding takes place from the urethra, the blood precedes the stream of urine. There is one exception to this rule, namely, where partially-healed ulcers exist in the canal. The contraction of the urethral walls, as the last drops of urine pass out, lacerates some of the delicate vessels in the ulcer. I have known this to occur in several instances.

A careful consideration of the foregoing points of difference will, in most cases, enable the practitioner to make a correct diagnosis.

Treatment.—When injury or disease of the kidney causes hæmorrhage, little treatment is necessary, except that which is calculated to remove the existing morbid condition of the organ. In hæmorrhage from the bladder the cause is different. Profuse bleeding from this organ is not infrequent in malignant disease, or fungous degeneration of the mucous membrane. The patient should be placed on his back, and cold wet cloths applied over the hypogastric region and perinæum. Ice-water, or pounded ice, can be thrown into the rectum at the same time. Should the bladder be distended with clots, a large-sized catheter must be introduced, the clots broken up and removed; warm water injected through it will soften the clots and assist in their discharge. If further measures be necessary to suppress the bleeding, the following solutions may be injected into the bladder, by means of the catheter:

R. Acidi gallici ʒ iij.
 Aquæ fl. ʒ iv. M.

Or,

R. Aluminis ʒj.
 Aquæ fl. ʒiv. M.

Many of the vegetable astringents, as uva ursi, hydrastis, krameria, may be used in a like manner.

In urethral bleeding, cold cloths and pressure generally answer all requirements. If there be laceration of the erectile tissue surrounding the urethra, accompanied by dangerous hæmorrhage, a steel sound, or catheter, must be introduced in the canal, and the penis bandaged over it firmly. This procedure is allowable in every case which cannot be controlled by other means. In case injections into the urethra are considered advisable, solutions of iron may be employed diluted, such as—

R. Liquoris ferri subsulphatis fl ʒj.
 Aquæ fl ʒiv. M.

Any thing stronger than this creates much irritation and pain.

After amputation of the penis, or the removal of tumors, the subsequent hæmorrhage from the erectile tissue is sometimes so profuse and uncontrollable by ordinary means as to compel the surgeon to apply the actual cautery. See APPENDIX.

ECCHYMOsis is an extravasation of blood in the meshes of the cellular tissue, generally occurring underneath the integument. It is especially apt to take place in those parts which are loosely attached to the underlying tissues, and where there is little subcutaneous fat. A characteristic example of this lesion is found in the ordinary "black eye."

Ecchymosis follows blows and contusions of all kinds. Its extent depends on the tissue bruised, and the amount and kind of violence which produced it. Very slight injury will occasion large ecchymosis in old persons, and in those who suffer from anæmia or other debilitating affections. In purpura and scorbutis, blood is effused in small, irregular patches. This is due to deterioration of the circulating fluid, and not to injury. The ecchymosed spot may be black, green, yellow, or crimson. Sometimes there is a mixture, the central part being dark blue, while the rest varies in color from a crimson to light green and yellow. The coloration is due to the red globules which have escaped from the ruptured capillaries, and to the hematine of the blood staining the parts. Where the staining is caused by hematine alone, the colors are light, and microscopical examination of the extravasated material shows that no corpuscles are present.

All bruises which are not attended with grave destruction of tissue may be treated with water-dressings. The injured part is to be kept at rest and covered with cold, wet cloths. If preferred, the bruised tissue may be bathed or kept moist with the following preparation :

R. Ammonię muriat. ʒj.
 Tinct. arnicæ fl. ʒj.
 Spts. vin. rect. fl. ʒij.
 Aquæ fl. ʒij. M.

For children, a further dilution is necessary, as their integumental covering is much more delicate than that of adults. One or two ounces of water added will weaken it sufficiently. This solution has an admirable effect in pro-

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ducing rapid absorption of the effused material, preventing inflammation and excessive discoloration. If there be much pain, the officinal lead and opium wash will give relief. A large extravasation of blood should be removed by incising the integument.

CHAPTER III.

HÆMORRHAGE FROM THE UTERUS.

Metrorrhagia. — Accidental Hæmorrhage. — Placenta Prævia. — Post-partum Hæmorrhage.

THE periodical discharge of blood from the uterus, which takes place every twenty-eight days, is a physiological occurrence, and does not require attention here. It rarely calls for active treatment, even when in excess (*menorrhagia*).

METRRORRHAGIA, or bleeding between the monthly periods, may keep up so constant a drain on the system as to destroy by exhaustion, or predispose to fatal diseases. Congestion of the uterus from chronic inflammation, tumors, ulcers, and abrasions of the cervix, are its principal causes.

The treatment of metrorrhagia consists principally in the application of cold to the hypogastrium, vulva, and neck of the uterus, and the internal administration of ergot, gallic acid, acetate of lead, etc. India-rubber bags, filled with ice-water, introduced into the vagina and pressed against the cervix uteri, may be used with good effect. The diseases causing the hæmorrhage should subsequently be removed, and the patient's strength increased by fresh air, exercise, good diet, and tonics.

ANTE-PARTUM HÆMORRHAGE is that variety which occurs