

acetabulum, the interstitial absorption of the margins of the cavity permitting the head of the femur to glide upward and backward. In 24 cases the direction of the dislocation is mentioned, and in 15 of these the head of the femur was dislocated upward and backward, in 4 into the great sciatic notch, in 2 directly backward, in 2 downward, and in 1 case forward. It will be seen, then, that in a large majority of cases that portion of the rim is fractured which is in the direction of the usual form of dislocation, so that the same injury which produces a dislocation may also cause a fracture, provided the force applied be sufficiently great, and the limb happen to be abducted at the time the injury is sustained.

The amount of shortening corresponds to the distance the head of the femur recedes from the socket. In Agnew's case no shortening could be detected on careful measurement. In all of the other cases in which mention is made of this symptom, it was present, but varied in degree from a quarter of an inch to four inches. If the head of the femur has left the socket the position of the limb is the same as in simple dislocation, the direction being determined by the form of dislocation. Flexion to a greater or less extent was present in all cases in which reference is made to this subject. Inversion of the foot and rotation of the femur inward were present in fourteen cases, while the opposite condition existed in three cases, and in ten cases no mention is made of this symptom. When the dislocation was complete, the limb remained immovable in its abnormal position until reduction was effected. The characteristic symptoms of the injury are those which are referable to the fracture itself, and these are crepitus, easy reduction, and difficult retention. Crepitus is always an important symptom in ascertaining the existence of a fracture. If it is distinctly felt, there can be no further doubt that a bone has been broken. The presence of this symptom is of special diagnostic value in connection with this subject, as the symptoms of dislocation are usually so prominent as to engage the whole attention of the surgeon. In the cases reported, this symptom is alluded to eighteen times, and in the following terms: distinct, eleven times; faint, once; marked, twice; indistinct, once; slight, once; and in two cases it was absent. Bigelow lays great stress on this symptom as being essential to the diagnosis of fracture; his words are: "To afford satisfactory evidence, cases of this sort should have been identified by autopsy, or at least by crepitus." I believe that the crepitus is not the same as in ordinary fractures, for in these it is the result of two rough bony fragments rubbing against each other, while in the cases under consideration it is a roughness we obtain by rubbing an articular surface against a broken surface of bone; hence it is not quite as loud and distinct. The detached margin of the acetabulum, unless comminuted, remains attached to the capsular ligament, and is pushed in front of or to one side of the head of the femur at the time dislocation occurs, and is dragged after it when reduction takes place. In most of these cases it is clearly stated that crepitus was felt just before the head of the femur slipped into the socket, or at the moment relaxation took place, and in both instances it must have been produced by the head passing over the rough broken edge of the acetabulum. The case with which reduction has been effected has attracted the attention of almost every observer. This is due to a more extensive laceration of the capsular ligament than occurs in simple dislocation, and also to the removal of the obstacle offered by the intact margin of the acetabulum. By the fracture of the rim, a more direct and even route has been prepared for the head of the femur to return to its socket.

Relaxation has always constituted the most perplexing feature of these cases. Its occurrence has usually led to a more thorough examination and correct diagnosis. It is well known that in ordinary dislocations of the hip-joint, when the bone has once been reduced, it remains in its place regardless of the after-treatment, differing greatly in this respect from the same lesion of the shoulder joint on account of the greater depth of the socket and the action of more numerous and powerful muscles

for maintaining retention. Hueter believed that the cases of habitual dislocation of the hip joint reported by Karpinski may have been the result of injury to the rim of the acetabulum. Relaxation takes place from the inability of the defective margin to resist muscular contraction. The difficulty in retaining the bone is increased by the depth of the fracture and its approach to the junction of the superior and posterior portions of the rim. In this connection it is important to determine what portion of the rim is most frequently the seat of the fracture. In 20 of the cases special mention is made of this fact, as follows: superior portion of rim, 2; superior and posterior, 7; posterior, 5; posterior inferior, 4; inferior, 1; anterior, 1. When the inferior or anterior portion of the rim is fractured, there is no tendency to relaxation provided the limb is kept in the extended position and slightly inverted.

Diagnosis.—A most thorough and critical examination while the patient is profoundly under the influence of an anæsthetic is always necessary to establish a positive diagnosis. If spontaneous relaxation does not follow immediately after reduction has been accomplished, and there are sufficient symptoms present to warrant a suspicion of the presence of the injury, it would be advisable to test the functional integrity of the acetabulum by flexion, adduction, and rotation of the thigh; if any part of the rim has become defective by fracture, relaxation will be sure to take place. This manœuvre, associated with the presence of crepitus, may be regarded as the crucial test.

The differential diagnosis must consider fractures of the neck of the femur with displacement, and simple dislocation. To distinguish this fracture from fracture of the neck of the femur, it is necessary to compare their most prominent symptoms:

FRacture OF THE RIM OF THE ACETABULUM.	FRacture OF THE NECK OF THE FEMUR WITHOUT IMPACTION.
<i>Position of Limb.</i>	
Thigh and leg flexed, adducted, and rotated inward.	Thigh and leg straight and rotated outward.
<i>Mobility of Limb.</i>	
Mobility of limb diminished.	Mobility of limb increased.
<i>Arc of Rotation.</i>	
The trochanter major rotates in its normal arc.	The arc of rotation of the trochanter major is diminished.
<i>Crepitus.</i>	
Crepitation is not rough, and is felt as the head passes over the broken edge of the acetabulum.	Crepitation is rough, and is felt when the limb has been drawn down to its normal length.
<i>Head of the Femur.</i>	
The head of the femur is felt to be displaced.	The head of the femur is normal in its position.
<i>Retention.</i>	
The deformity reappears if by any movement of the limb the head of the femur is made to leave the socket.	The deformity reappears as soon as extension ceases.
<i>History.</i>	
Is most frequent in middle life and is the result of great violence.	If intracapsular in variety, it occurs in the aged and is the result of slight violence.

Crepitus and a tendency to relaxation are the symptoms on which we place the most reliance for differentiating this fracture from simple dislocation. Acupuncture, as advised by Middeldorpf, may be of great service to determine the existence of fracture of the rim. After reduction has been accomplished, a long stout needle, previously well disinfected, is passed through the tissues to the supposed seat of fracture. By lateral movements of its point the defect in the margin, as well as the roughness of its surface, is ascertained. An effort should now be made to fix the detached fragment with the point of the needle, and by rubbing it over the broken margin a rough crepitus is elicited.

Prognosis.—The prognosis must have reference to the preservation of life and the restoration of the utility of the limb. All of the old authors regarded fracture of the pelvic bones as a grave lesion, almost necessarily leading to a fatal termination. I believe that all uncomplicated fractures of these bones tend to recovery, and that death is attributable in most instances to a lesion of some important pelvic or abdominal viscera. In 23 cases in which the result is noted in this regard, 13 recovered and 10 died. The prognosis is less favorable if the floor of the acetabulum is also implicated in the fracture. Of 4 cases of this sort, only 1 recovered. In 9 cases out of the 13 that recovered, the limb remained in place after reduction, and the recovery was complete. In 4 cases redisslocation took place, the limb assuming the same malposition as after simple unreduced dorsal dislocation of the femur.

Treatment.—The indications to be fulfilled in the treatment of this class of injuries are: (1) to reduce the dislocation; (2) to retain the head of the femur in the socket until union has taken place between the fragments. The dislocation may be reduced by manipulation or by extension; in both instances flexion constitutes an important step in the operation. Bigelow says: "These displacements, especially the displacement backward, demand the usual attempts at reduction by flexion. Although the bone inclines to slip from the socket it can be retained there, in cases of a sort heretofore considered difficult of treatment, by angular extension, with an angular splint attached to the ceiling, or some other point above the patient; or if any manœuvre has reduced the bone, the limb should be retained, if possible, in the attitude which completed the manœuvre." In 17 of the cases reported, the manner of reduction is specified as follows: by extension, 11 (in most of these cases extension and flexion were combined); by manipulation, 2; by manipulation and extension, 1; by manipulation over Sutton's fulcrum, 1; by extension with pulley, 2. In all but one of the cases the displacement was corrected without difficulty. As in most instances a diagnosis cannot be made before reduction has been accomplished, surgeons will resort to their favorite methods of reduction. Should the nature of the lesion be determined beforehand, traction in the direction of the broken edge of the rim, and rotation of the limb inward, will readily restore the normal relation of the parts. As we possess no direct measures of keeping the fractured surfaces in apposition, all our efforts must be directed toward preventing relaxation by appropriate position and fixation of the limb and pelvis. The depth and extent of the fractured margin, as well as the location of the fracture, will determine the difficulty in retaining the head of the femur in its normal position. If sufficient depth of the upper portion of the rim is left to serve as support to the head of the bone, all that is necessary is to dress the thigh in the abducted position, so as to press the head of the femur against the floor of the acetabulum. As the contusions of the soft parts about the hip and pelvis are severe, a plaster-of-Paris splint cannot be applied as a primary dressing. The healthy limb and pelvis should always be included in the retentive dressing. Bonnet's wire breeches, Dzondi-Hagerdom's apparatus, or Hamilton's splint, as advised by him in the treatment of fractures of the femur in children, will be found sufficient to maintain retention. After the swelling in the soft parts has subsided, nothing more perfect could be devised than a plaster-of-Paris dressing, including both limbs and the pelvis.

When nearly the entire depth of the upper or posterior portion of the rim has been detached, muscular contraction must be counteracted by permanent extension with the weight and pulley, and immobility of the joint should be secured by appropriate splints. In cases of this sort, angular extension with an angular splint, as advised by Bigelow, will answer an admirable purpose. The unbroken part of the rim should be made the support of the head whenever practicable. Thus, for example, when the posterior part of the rim is fractured the thigh should be dressed in the position of hyperextension; a broad,

firm, pelvic band, with a compress above the trochanter, being employed to aid in keeping the bone in place, in approximating the fractured surfaces, and in preventing muscular spasms.

The treatment should be continued for a sufficient length of time to secure a firm union of the detached fragment with the broken rim, which, as in other fractures, generally requires from four to six weeks. The patient must be directed to exercise great care in the use of the limb for a considerable length of time after all dressings have been removed, so as to obviate any undue pressure against the recently repaired rim of the acetabulum.

N. Senn.

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ACETAL.—Ethylene-di-ethyl-ether—di-ethyl-aldehyd, $\text{CH}_3\text{CH}(\text{OC}_2\text{H}_5)_2$. This is a preparation obtained by distilling a mixture of acetic aldehyd and alcohol in the presence of some dehydrating agent such as sulphuric acid. It is a colorless, limpid liquid, very volatile, and with a rather agreeable ethereal odor. On the tongue it is rather sharp, but leaves a pleasant nutty after-taste. It is soluble in eighteen parts of water and in twenty-five parts of chloroform; and it is miscible in all proportions with alcohol and ether. It boils at $104^\circ\text{--}106^\circ\text{C}$. ($219^\circ\text{--}222^\circ\text{F}$), and its specific gravity at 20°C . is 0.831. Its particular use is as an agreeable sedative, and it also has some power as a hypnotic and local anæsthetic. As a hypnotic, however, its effects are too transient to be of much value; and the more volatile ethers are preferable for the production of local anæsthesia. As a sedative in headache and nausea one to three drachms may be given in emulsion with orange flower or cinnamon water, and may be administered either by mouth or by rectum.

Acetal is also the trade name for a headache remedy which consists of various volatile oils and acetic ether dissolved in alcohol. W. A. Bastedo.

ACETAMINOL.—Para-acetamido-benzoyl-eugenol, $\text{C}_6\text{H}_5.\text{OCH}_2.\text{C}_2\text{H}_5.\text{O}.\text{CO}.\text{C}_6\text{H}_4.\text{NHCH}_2.\text{CO}$, prepared by the action of benzoic and aminoacetic acids on eugenol. It is in whitish scales or a crystalline powder, is practically insoluble in water, and is soluble in alcohol. It has the general antiseptic action of benzoyl eugenol combined with more or less power to reduce the temperature. It has been used as an intestinal antiseptic and in the treatment of pulmonary tuberculosis. Dose, 5 to 15 grains. W. A. Bastedo.

ACETANILID.— $\text{C}_6\text{H}_5.\text{NH}.\text{C}_2\text{H}_5\text{O}$ (Phenylacetamide, Antifebrin). Of the host of new remedies that have been manufactured during the past few years, this is one that has received general approbation and has sustained the reputation with which it was introduced. Since its introduction in 1886, by Drs. Kahn and Hepp, it has been extensively employed, without detracting from their estimate of its virtues. Further study has established its antipyretic and analgesic properties, and were it not that in phenazone and phenacetine we have drugs with a similar action it would be prized as of inestimable value.

It now occupies a position in the new pharmacopœias of the United States and Great Britain—in the former as *acetanilid*, "an acetyl derivative of aniline"; in the latter as *acetanilide*, "a crystalline substance obtainable by the action of glacial acetic acid on aniline, and subsequent purification." It occurs as white, shining micaceous, crystalline laminae, or a crystalline powder, odorless, having a faintly burning taste. Soluble at 59°F . in 194 parts of water and in 5 parts of alcohol; in 18 parts of boiling water; also soluble in 18 parts of ether and easily soluble in chloroform. When heated to 235.4°F . it melts. Upon ignition it is consumed without leaving a

residue. It is neutral to litmus paper. A simple test is to add a cold saturated aqueous solution to ferric-chloride test solution; the color of the latter should not be changed, indicating an absence of aniline salts.

Acetanilid exercises a depressing action upon the gray matter of the nervous system, and a destructive action upon the constituents of the blood. Upon the former depends its therapeutic properties, while the latter is an altogether undesirable effect.

Its action on the nervous system is most marked upon the gray matter of the spinal cord, by which the power of conducting painful impressions is greatly reduced, and at the same time it lessens the receptivity of the brain. The brain retains its clearness, but motive power and conduction are affected in a slight degree.

Its effect upon the medullary centres is to reduce the frequency and force of the pulse, depress respiration, and by relaxing the blood-vessels to promote the flow of blood to the surface and lessen blood pressure. In very large doses these effects are intensified, and upon animals the drug has caused anaesthesia, loss of reflex action, weakened circulation, convulsions, coma, and general paralysis.

In ordinary doses its action upon the blood is not noticeable, but if its use is persisted in it leads to anaemia. In over-doses it acts directly upon the haemoglobin, producing methemoglobin and lessening the oxidizing power of the blood. The blood may become of a dirty-brown color and haemoglobinuria may be present.

When toxic symptoms arise there is generally a sudden sense of weakness and oppression, with a rapid lowering of temperature and bluing of finger nails and lips; this is accompanied or followed by vertigo, giddiness, noises in the ears, dilated pupils, cold extremities, subnormal temperature, shallow breathing, feeble pulse, nervous twitchings, convulsions, and coma. It is after large doses, or during the prolonged use of the drug, that these symptoms of poisoning are met with, but many instances are reported in which an ordinary therapeutic dose has produced an alarming condition.

In the administration of the drug there are many points to be considered which influence its action. As the effect of the dose is continued for two or three hours, the dose should not be repeated until that interval has elapsed. When the use of the drug is persisted in for some time, a day of freedom from its use should occasionally be allowed to intervene, as it undoubtedly possesses a cumulative action. Many instances are reported in which severe toxic symptoms have followed the same dose that had been given for some days with only beneficial effects. When the patient is anaemic, and in the debilitated and aged, the toxic symptoms more readily supervene, and in women, during the few days previous to menstruation, the condition of the blood is supposed to favor the decomposition of the drug and increase its action. The time of the dose, in relation to the natural rise or decline of temperature, is of importance; when given with the increase of fever, its action is slower and within control; but if its effect coincides with the decline, the fall will be rapid and probably in excess of what is expected.

The tendency to cause profuse sweating and cyanosis has unfortunately engendered in many a sense of dread which has restricted its use. This toxicity is greatly over-estimated and should not be feared if the dose and mode of administering are attended to. It is rather a danger-signal far in advance of any serious consequences.

The cyanosis and depression are not of long duration and are rapidly overcome. Fatal cases are rare, and very large quantities of the drug have been taken without causing death. A case is reported in which teaspoonful doses were taken at short intervals until one ounce was disposed of, and in another instance seven and a half drachms were taken with suicidal intent. In both cases recovery followed.

Kahn and Hepp in their original papers stated that one-fourth of a gramme (3.85 grains) was a sufficient dose, and subsequent writers have insisted on the efficacy of even smaller quantities.

Instead of the seven or ten grains so frequently given,

the consensus of opinion now points to three or four grains as a more proper initial dose in every case in which its use is begun, to be increased as the individual susceptibility is learned.

During the past few years it has become evident that, when applied to raw surfaces, acetanilid may be absorbed and produce its physiological effect. In some instances acute poisoning has followed this use of the drug in infants and children. In one case the umbilical cord was dressed with about sixty grains of the crystals. On the second day prostration and cyanosis were marked, and continued for three days. In another case between twenty and forty grains were applied to a burned surface. When used for two successive days the same toxic symptoms arose. Many other cases have been reported. In one, an infant four days old, death resulted in four hours.

A distressing itchiness and burning of the skin, accompanied by a varying degree of erythema, has occasionally been noticed. It is not so common as during the use of other coal-tar products, but many cases have been recorded.

To counteract the poisoning, stimulating treatment is indicated. Warmth to the extremities and surface; alcohol, ether, and camphor by the mouth or hypodermically; belladonna is particularly recommended, four drops of the tincture every half-hour for four doses, afterward at longer intervals, having proved of service. Strychnine is also useful. The inhalation of oxygen is indicated. In extreme prostration the transfusion of saline solution has been adopted with benefit.

Acetanilid in fever is used solely as an antipyretic, and as such it has been classed as one of the best we possess. It is utilized in typhoid fever, pneumonia, phthisis, erysipelas, acute rheumatism, and in all conditions in which hyperpyrexia is present. It was thought by some to have specific properties in acute rheumatism, but such a view is no longer tenable; the duration of the disease is not affected, complications are not prevented, nor does it guard the patient against relapses. It reduces the high temperature and relieves the discomfort and distress that are present, and its sedative action on the nervous system adds to its calming and refreshing effect. Its continuous administration is not advised, but only its use when the temperature is such as to require interference.

In phthisis it proves particularly soothing. In the hyperpyrexia of pneumonia it is used with advantage, but in this condition, as well as in advanced phthisis, where the respiratory tissue is reduced, it must be given with caution.

In acute rheumatism it relieves the painful and swollen joints and reduces the temperature. When the pains are severe larger doses are required than in other febrile affections. Its action is generally thought not to be so efficacious as that of antipyrin or salicylate of soda.

Its analgesic properties have proved almost as decided as its power of reducing pyrexia. It is particularly useful in all pains due to irritation of the sensory nerves, or pains of a reflex character, such as those of locomotor ataxia, neuralgia, sciatica, lumbago, pains after operations, ovarian and menstrual irritation; also in migraine, nervous headaches, and the headaches of growing children. In all paroxysmal pains it has proved equally successful.

It has been recommended and tried in epilepsy and chorea, but without much advantage.

Quite recently it has been lauded as a very effective remedy for threatened premature expulsion of the ovum. It is stated that from seven to ten grains will lessen the uterine contraction and pain and check the hemorrhage; the dose to be repeated at intervals of two or three hours.

In the diseases of infancy it has proved of decided usefulness. Its effects are of longer duration and the toxic symptoms are not so liable to follow its use. In scarlet fever, measles, pneumonia, etc., its action has been most gratifying, reducing fever and restlessness and inducing a quiet and refreshing sleep. In whooping-cough it is

also used with success; its action promotes expectoration and reduces the frequency and duration of the paroxysms.

Its non-irritating and antiseptic properties have led to its employment as a dressing after surgical operations, as well as for wounds of every description. It is also recommended as a substitute for iodoform in venereal sores. It may be dusted pure over the parts or mixed with boric acid in varying proportions. A glycerol is made by adding one part to forty of cold sterilized glycerin. If a stronger preparation is desired, a solution of acetanilid in alcohol is prepared, twenty grains to the ounce, and one ounce of this mixed with four of glycerin. It may also be combined with vaseline or collodion.

Beaumont Small.

ACETIC ACID.—Acetic acid, $\text{HC}_2\text{H}_3\text{O}_2$, the well-known acid of vinegar, is a body fluid at ordinary temperatures, and miscible in all proportions with water. Mixtures of the acid and water in different proportions constitute the different grades of the acid in commerce. Strong acetic acid is caustic, largely through its property of dissolving the formed material of the connective tissues to a pultaceous translucent substance. Being caustic, it is of course irritant, and swallowed in concentrated condition operates as a corrosive poison, the effects and symptoms being substantially the same as in poisoning by the strong mineral acids. Two cases of death have been recorded. The treatment is similar to that to be employed in case of poisoning by a mineral acid. In non-corrosive strength of solution (five or six per cent., the equivalent of vinegar), acetic acid produces the usual local effects of the sour acids—exciting the flow of saliva and tending to oppose sour fermentation of the food—and is also distinctly astringent. Inhaled, the fumes are reviving in faintness and may relieve headache.

Acetic acid has many uses in pharmacy. Recently it has been urged strongly by high authority that the Pharmacopoeia should substitute acetic acid largely for alcohol as a menstruum for the preparation of extracts, and it is probable that some such course will be followed. It has even been proposed that this class of extracts shall bear the special name "Acetracts." In medicine the strong acid may be employed as a caustic, as to warts or cancers, and the weak acid used to make refreshing acid draughts in fever, or cooling lotions in inflammatory skin affections. Acetic acid is official in the U. S. Pharmacopoeia in the following forms:

Acidum Aceticum Glaciale, Glacial Acetic Acid.—This is defined to be "nearly or quite absolute acetic acid." It is "a clear, colorless liquid, of a strong, vinegar-like odor, and a very pungent, purely acid taste. When the acid is cooled to a temperature as near as possible to 15°C . (59°F .), but yet in a liquid form, its specific gravity should not be higher than 1.058, corresponding to at least ninety-nine per cent. of absolute acid. At a temperature somewhat below 15°C . (59°F .), the acid becomes a crystalline solid" (U. S. P.). This grade of the acid is for pharmaceutical uses.

Acidum Aceticum, Acetic Acid.—The grade of acid thus simply named is a "liquid composed of thirty-six per cent., by weight, of absolute acetic acid and sixty-four per cent. of water." It is "a clear, colorless liquid, having a strong, vinegar-like odor, a purely acid taste, and a strongly acid reaction. Specific gravity, about 1.048 at 15°C . (59°F .). Miscible with water and alcohol in all proportions. When heated, the acid is volatilized without leaving a residue" (U. S. P.). This grade of acid is somewhat stronger than the best samples of the commercial so-called "No. 8" acid, these "No. 8" acids rarely being of higher specific gravity than 1.030 and often sinking to 1.025 or less (Squibb). This is the acid that results from the purification of the crude acid—*crude pyroigneous acid*, so called—obtained by the destructive distillation of wood.

Acetic acid of the present quality is sharply irritant and even mildly caustic. Dangerous symptoms have resulted from swallowing it, undiluted, in quantity of two

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or three ounces. The acid may be used as a mild caustic, but its principal uses under its own form are pharmaceutical.

Acidum Aceticum Dilutum, Diluted Acetic Acid.—This preparation is compounded of one part, by weight, of acetic acid of the foregoing grade and five parts, by weight, of distilled water. It "contains six per cent., by weight, of absolute acetic acid. Specific gravity, about 1.008 at 15°C . (59°F .)" (U. S. P.). This diluted acid is of the strength of the best qualities of vinegar, and is better than vinegar for all the purposes of the same, medicinal or dietetic. Squibb says: "If one part of alcohol be added to about two hundred and fifty-six parts of this diluted acetic acid—that is, about half a fluidounce to the gallon—and the mixture be set aside for a few weeks (the longer the better), enough acetic ether is generated to give it the full, clean aroma of fine vinegar, and then for table use it is very far superior to any vinegar made in the ordinary way by fermenting cider."

Diluted acetic acid is the most convenient grade of the acid for medicinal use, and has also, in the U. S. Pharmacopoeia, superseded vinegar for pharmaceutical purposes. For an acid draught a five-per-cent. addition to water is appropriate, and for a lotion a twenty-five-per-cent. addition. The popular notion that the habitual use of vinegar tends to deterioration of nutrition and health is certainly not true of a moderate indulgence, if indeed it be true at all.

Edward Curtis.

ACETIC ETHER.—Under the title *Ether Aceticus*, Acetic Ether, the U. S. Pharmacopoeia makes official a preparation consisting of the ethereal salt, *ethyl acetate*, with a little contaminating alcohol and water. Acetic ether is described as "a transparent, colorless liquid, of a fragrant, and refreshing, slightly acetous odor, and a peculiar acetous and burning taste. Specific gravity, 0.893 to 0.895 at 15°C . (59°F .). Boiling point, about 76°C . (168.8°F .). Soluble in about eight parts of water at 15°C . (59°F .); miscible in all proportions with alcohol, ether, fixed and volatile oils. Acetic ether is readily volatilized, even at a low temperature. It is inflammable, burning with a yellowish flame and an acetous odor" (U. S. P.). Acetic ether should be kept in well-stoppered bottles and away from lights or fire.

The effects of acetic ether upon the animal economy are similar, in a general way, to those of common ether, the most important point of difference being that acetic ether is the slower in operation. For this reason this ether is not available as a surgical anaesthetic; but, on the other hand, by reason of its agreeable odor, it makes an excellent and grateful cardiac stimulant, antispasmodic, and carminative, taken internally. Used externally, it may serve to mask disagreeable odors. It may be given internally, in quantities ranging from fifteen to thirty drops, well diluted with water or with some medicinal preparation, to which the ether is added as an adjuvant or corrigent.

Edward Curtis.

ACETONE.—Acetone, $\text{C}_3\text{H}_6\text{O}$, the ketone of acetic acid, called also *pyroacetic spirit* and *pyroacetic ether*, is a colorless, limpid, and inflammable liquid of pungent quality, miscible in all proportions with water, alcohol, and ether. Its effects upon the animal system are, doubtless, of the general nature of those of the volatile alcohols and ethers, but the substance has never been systematically employed as a medicine.

It is used for chemical purposes in the manufacture of chloroform, and as a solvent for fats and resins.

It occurs normally, in small amounts, as an ingredient of blood, urine, etc.

Edward Curtis.

ACETONURIA.—DEFINITION.—The presence in the urine of a pathological quantity of acetone, $\text{CO}(\text{CH}_3)_2$. HISTORICAL.—Petters in 1857 discovered acetone in the urine of a patient suffering from diabetic coma, and three years later Kaulich demonstrated its occurrence in ordinary cases of diabetes and added a clinical picture of the condition known as acetonemia.