day. On the eighth day, the wound being healed, he was discharged.

CASE IV.—J. R. Age 21. Admitted January 16, 1906. Four weeks previous he contracted gonorrhea and seven days ago there developed an epididymitis. Medical treatment offered but little relief. On examination the testicle was very painful, the lightest palpation causing great agony. The affected organ was not much enlarged, its circumference being nine inches; the skin was not inflamed, but was slightly edematous. The epididymis and cord were enlarged and markedly infiltrated. On incision the skin was seen to be infiltrated, and on opening the tunica vaginalis a dram and a half of clear, straw-colored fluid escaped. That part of the tunica vaginalis covering the epididymis was covered with much lymph, and its parietal and visceral layers here were glued together; after these were separated there were seen to be present punctate hemorrhages and very marked general inflammation of the membrane covering the epididymis. Cultures taken on hydrocele agar and cover slips were negative. The epididymis was punctured over the globus major and its body, the result being an exudation of blood and serum, but no pus; but on puncture of the globus minor pus was found. A probe was inserted, and three or four drops of pus were massaged out, then the cavity was syringed out and the wound closed as previously described. Cultures from the pus were sterile, and no organisms could be found on cover slips. The wound was dressed on the second day, there being a slight ooze on removing the drain. Patient experienced no pain after the operation, and convalescence was uneventful. He was walking around, free of pain, on the sixth day. This case interested me as showing no redness of skin, even when pus was present.

CASE V.—W. B. Age 22. Admited to the hospital December 15, 1905. He contracted gonorrhea November 30. A right-sided epididymitis developed in one week, from which he suffered excruciatingly, and on admission his expression was that of one enduring agony. Operation December 16. Temperature 100°. The tunica vaginalis contained one ounce of bloody-colored fluid. The epididymis was greatly congested and swollen; this was punctured about twenty times. Pus containing gonococci was obtained from the globus minor. A membrane of lymph was stripped off from the tunica vaginalis; this had all of the characteristics of a diphtheritic membrane, which upon removal left a granular bleeding surface. He had complete relief from pain after recovering from the anesthetic. Temperature was normal in thirty-six hours. On December 22 he had no pain; the induration of the cord and epididymis was much less. On December 26, when he left the hospital, the induration had disappeared and there was no pain on palpation.

CASE VI.—J. T. Age 26. This case closely resembled the fourth case, except that no pus or organisms were found either in the epididymis or tunica vaginalis, but the relief was as marked and uneventful. Since the presentation of this paper three other cases have been operated upon, the results being uniformly good as regards relief of pain, lessening of infiltration, and rapid recovery.

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THE EFFECTS OF ABSINTHE.

BY EMMA E. WALKER, M.D.,
NEW YORK.

FRANCE as a nation has become so roused to the danger of alcohol and the essences, especially absinthe, which are in such common use in that country, that on December 29, 1900, the French government requested the Academy of Medicine to determine the comparative toxicity of the various alcoholic beverages in use with a view to proscribing the ones most dangerous to health. After an investigation it was suggested by one of the committee that absinthe alone be put into the forbidden list.

In France absinthe is known as the "scourge," the "plague," "the enemy," and "the queen of poisons." Absinthe is a liquor of an emerald green color, consisting of from 47 to 80 per cent. of alcohol, highly flavored with the aromatics, wormwood, anise, fennel, coriander, calamus aromaticus, hyssop, and marjoram. The special variety of this drink depends upon the proportions and kinds of these flavors composing it. Its quality will also depend upon the quality of its constituents. Since any unpleasant taste may be easily concealed by the strong aromatic used, the alcohol employed in this liquor is frequently very impure.

Absinthe heads the list of toxic essences. The ordinary absinthe contains a far larger percentage of alcohol than does whiskey. Consequently its toxic effects are far greater than are those of whiskey, for to the increased amount of alcohol there is added the deadly wormwood.

In France, according to the law of March 26, 1872, it was declared that the commerce and sale of the essence of absinthe ought to be carried on by the pharmacists according to the law on the sale of poisons.

Absinthe, *Artemisia absinthium*, is the common wormwood, the bitterness of which has passed into a proverb. Absinthe is quoted to contain only one-third of 1 per cent. of the oil of wormwood, to which are due the characteristic effects of the beverage. The bitter principle of absinthium, *absinthin*, is a narcotic poison. The coloring matters used in absinthe are often very deleterious; in fact not infrequently copper salts have been used in order to produce the green color.

Absinthe is chiefly used in France, and especially in Paris. It was introduced there after the Algerian war of 1844-7 by the soldiers, who, on their campaign, had been advised to mix absinthe with their wine as a febrifuge. The use of absinthe rapidly increased in France with such disastrous results that it has been described by French physicians as constituting a graver danger to the public than alcohol itself.

The habit of absinthe drinking is a most insidious one, and when it is once indulged it seems almost impossible to break. Thirst is more exacting than hunger. It is often a purely imaginary sensation. "Arrived at a morbid degree, the passion for drink is not only a vice which blights equally the reason, morality and justice, but is a veritable mental malady" (Paul Jolly). "The poisonous and inebriating effects produced in those who drink the liqueur of absinthe or cream of absinthe is undoubtedly due more to the wormwood than to the alcohol" (Trousseau and Pideaux).

The effects of the internal use of absinthe naturally fall into two groups, due respectively to the chief ingredients of the liquor—alcohol, and the essential oil of wormwood, which has a special affinity for the brain and nervous system in general. These

groups may be subdivided according to their physiological, pathological, and mental effects.

The effects of alcoholic beverages in general are too well known to be dwelt upon in much detail. Atwater, one of the American Committee of Fifty who have recently investigated the drink problem, declares that alcohol, when taken habitually in excess, is ruinous to both health and character. In large enough quantities it is a poison. According to Abel, alcohol does not produce "any persistent increase of muscular power, but only enables a brief spurt to be made, which is soon followed by a depression of energy to below the normal." This writer also says that the "moderate" quantity of alcohol is "represented by one, or at most two, glasses of wine (10 per cent. alcohol) or one pint of beer, or their equivalents in terms of alcohol, in the twenty-four hours." Lauder Brunton states that two fluid ounces — rather less than the ordinary sherry glassful—is the extreme limit in twenty-four hours. No authority questions the fact that an excess of alcohol impairs certain cerebral functions—attention, memory, self-control—as well as causing insanity in many cases. But what constitutes excess will depend to a certain extent upon the individual, the occupation, and other conditions.

Physiological and pathological changes are caused by the use of both alcohol and absinthe and are the keynote to the mental and physical effects of these two drugs.

One of the first effects of alcohol is dilatation of the blood-vessels and a quickening of the circulation. After the spurt of the stimulation, due to the acceleration of circulation, comes the stage of diminution of mental power. The superficial blood-vessels become dilated after a moderate amount of alcohol, which might account for the effect on the sexual organism sometimes noted.

Alcohol in small quantities causes an increase in the secretions and an increase in peristaltic movement. Large quantities diminish the secretion of gastric juice and cause active congestion of the mucous membrane of the stomach and a great increase of mucus. After the absorption of alcohol there is less tissue change, hence the tendency to the accumulation of fat.

The Pathological Effects.—By repeated indulgence in alcohol the blood vessels which supply the nerve centers with blood become altered, and the nerve centers themselves also are changed. The nerve cells and fibers to which the activity of the nerve centers is due are supported and bound together by connective tissue. In chronic alcoholism this tissue is much increased. The result is pressure on the nerve cells and fibers, which causes them to waste away.

The Mental Effects.—The effect of the narcotic action is to decrease the close relationship that exists between the individual and his environment and the delicacy of his power of adjustment to external circumstances. The ordinary self-restraint which he has previously shown, together with the consideration of his surroundings, disappears by degrees. The alcoholic becomes more egoistic and selfish, and his surroundings seem less important to him. His mental faculties are unrestrained, and they may be compared to a fly wheel without a brake. He becomes vacillating, and his moral sense is diminished. The poison has destroyed his will. Alcoholic liquors pervert the most important and noble faculties of the man who abuses them and make him old before his time. His brain suffers. His speech becomes more free. He loses his discretion. He repeats his own, as well as others' secrets. His imagination becomes more lively. His emotions are more easily excited—his affection, his hate, or his pugnacity. The memory is impaired. "Mental concentration and power are lessened and the subject becomes 'willless (abulic).'" The gradual disappearance of his faculties proceeds in an inverse order to that of their development. "Alcohol makes man first a child, then a beast."

The chief action of alcohol, according to certain recent investigators, is that of a paralyzant. The nervous centers are affected in the following order: First, the judgment and self-restraint, then the power of perceiving the relations of external circumstances to the individual. He becomes ridiculous, foolhardy, stupid, maudlin, or quarrelsome. After the cerebrum is affected the cerebellum follows, and consequently the power of coordination is lost, and the man staggers. The spinal cord and the medulla are next disturbed.

When the circulation is stimulated a pleasurable sensation of well-being is produced and a childish joyousness. When the pleasure is greatest there is greatest danger of the victim being led into excess.

From the habitual use of alcohol a chronic poisoning develops, even when the beverage has not produced drunkenness. The artificial excitement, due to alcohol, soon gives way to nervous depression and feebleness. The continued use of alcohol leads to chronic disease of the different organs.

Absinthe acts, as would be expected from its composition, like an alcoholic liquor, except that certain features are exaggerated and some new features are added, for it has a marked physical action of its own. The effects of absinthe develop far more rapidly than those of alcohol. What has been said of alcoholism can also be said of absinthism: "Alcoholism is primarily a physiological disease comprising: 1. Paralysis of the inhibitory power of the will; 2. A temporary amnesia; 3. A temporary affective and intellective modification of the personality."

The effects of absinthe in a small dose are giddiness, vertigo, muscular disorders, and convulsive movements like those produced by successive electric shocks. In a stronger dose it causes attacks of epilepsy, more or less violent, which are not produced by alcohol. Brunton declares that these convulsions are due to the action of absinthe upon the medulla—not upon the cerebrum. The end is favorable, as a rule, but may be fatal. Corning has investigated the chronic influence of this drug upon the brain, especially its higher centers, and emphasizes this effect. Brunton says that absinthe is a spinal stimulant.

The Physiological Effects.—In small quantities the oil of wormwood quickens the heart's action, and in larger ones it is a narcotic. It slightly increases the secretions. Amory, in his experiments with absinthe, found that after its administration the nervous centers, especially the cord, were congested. Magnan found the cerebrum and spinal cord congested.

The Pathological Effects.—Amory found an infiltration of blood in some places in the nervous centers. The heart was soft and flaccid. Phillips states that the membranes of the brain and cord are always injured. The lungs are congested, and extravasations of blood are found in the membranes of the heart. Absinthe drinking is followed by a softening of the brain and general paralysis, more often than is the drinking of alcohol.

The Mental Effects.—Lanceraux says that the danger incident to the use of the drug is on account of: 1. Its action on the nervous system; 2. The

state of denutrition resulting from its continuous use. Cushny states that the oil of absinthe causes marked excitement and convulsions. In cases of poisoning the symptoms related to the disturbance of the nervous system predominate. The brain stimulation causes different kinds of convulsions. The epileptiform fits observed after its ingestion are due mainly to the action of this drug on the cerebrum, although other parts of the central nervous system are involved. Cadeac and Meunier sum up the mental effects of this drug as follows: Somnolence, torpor, loss of memory, intellectual paralysis, dullness, complete loss of will, and brutishness. These effects are, as a rule, observed in the absinthe drinker.

Absinthe Epilepsy.—Abel says that absinthe gives rise to hallucinations from the very first. States of delirium are often observed between the epileptic attacks, and there may be delirium without epileptic seizures. For some time it has been noticed that results other than those due to alcoholism take place in absintheurs. Marcé and Magnan did some experimental work with animals in 1864. In one case Magnan gave five grams of the oil of wormwood by mouth to a dog. The animal had an "attaque d'epilepsie" in half an hour. A second atack developed ten minutes later, after which hallucinations occurred. The dog savagely attacked the bare, white wall, undoubtedly thinking that it was an enemy. Binz remarks that it is plain to see that a drug which so markedly stimulates the brain, will, by continual use, gradually bring about such changes in the cells, the vessels, and the membranes of the brain, as finally to develop that type of delirium tremens which is complicated by characteristic epileptic seizures.

Danillo relates the following incident: A medical attendant observed a man who had swallowed about four teaspoonfuls of the oil of wormwood. Convulsions of the face and limbs, loss of consciousness, and violent constriction of the throat, took place within a few minutes after the oil had been taken. Recovery was complete, but, as in the case of most epileptic attacks, the man had no recollection of the beginning of the fit. The victim of epileptic mania does deeds of violence with no consciousness of the same; nor has he any memory of them after they are done. This type is often developed by habitual indulgence in absinthe. Victor Horsley and Magnan, in their studies of epilepsy, induced the convulsion by injecting absinthe. Horsley concludes that the principal seat of the disturbance must be the cerebral hemispheres, and especially their cortical mantle.

Epileptic Insanity.—"The sudden and local discharge from the cells of the cerebral cortex may cause mental as well as motor disturbances." The mental disturbances may occur without the motor disturbances. Epileptics are usually gloomy, irritable, and irrascible, and "pass rapidly from anger to suavity." Epilepsy may develop into acute epileptic insanity; it sometimes occurs without any convulsive attacks. The mania may begin suddenly. The return to sanity is usually sudden, and is accompanied by forgetfulness of the acts performed.

Equivalents of the Epileptic Attack. — Instead of ordinary convulsive attacks of epilepsy, a person may have a variety of acute mental disturbances. "Epileptics may unconsciously, automatically, and with apparent purpose, perform a number of coordinate acts. Homicidal, obscene, or pyromaniac acts may thus be done by epileptics, or intricate maneuvers, such as require the use of tools may be accomplished. Subsequently, as a rule, they have no knowledge of such acts. The procursive fit may, in a sort of status, be prolonged, so that the patient may make journeys of several hours' or several days' duration, during which the conduct is so natural as to attract no notice. Self-consciousness usually is rather abruptly restored, and they are astonished to find themselves at a distance from home, with an intervening blank period of time" (Church and Peterson).

It is said that psychic degeneration is manifested in 60 to 80 per cent. of all epileptics. Probably not more than 10 to 15 per cent. of epileptics develop insanity; however, the proportion is so large as to show a close relation between this functional cortical malady and mental disorders. "When progressive epileptic degeneration occurs, it manifests itself by the following symptoms: Slowness of ideation and articulation; abnormal irritability of temper; hypochondriacal depression; paranoid outbreaks of various kinds, and dementia."

The various effects of this deadly drug on the whole man are so closely interwoven, the one with the other, that it would appear impossible to draw a sharp line of demarcation between any two. Again, in considering the effects of the beverage, absinthe, the effects of alcohol must also be considered.

The chronic mental disorders of the chronic alcoholic result in an insane jealousy, which is due to the deteriorating influence of alcohol on the generative organs. It has been noticed that some men, as they grow older, indulge in sexual excess as well as in alcoholic excess. When the tone of the generative organs is lowered, stimulants do not improve their condition, but rather weaken than strengthen them.

There is on record the history of one family, in which the progenitors indulged in alcoholic beverages, and among their thirty-three descendants there were four prostitutes. Crothers states that moral insanity follows all use of alcohol. The sexual conduct of those morally insane from the use of alcoholic stimulants is without restraint. Many who exhibit the symptoms of moral insanity appear little, if any, changed in other respects.

From the point of view of absinthe epilepsy, it is known that in many epileptics the sexual instinct is most intense. It may be that the cerebral changes incident to the epileptic outbreak cause an abnormal stimulation of the sexual instinct. In many cases this excitement is not active during intervals, but is shown only in connection with the epileptic attack or in the post-epileptic period. "Nobody questions the harm wrought by wormwood in its rôle of servant to human debauchery." Through the entire career of chronic alcoholism "runs the thread of mental degradation involving moral obliquity." The poison produces a physical degradation, which is followed by mental and moral palsy. Lying becomes second nature; conscience is deadened. Kerr says that "the sexual function is responsible for much periodical excitation of inebriety."

The temporary effects of absinthe will, of course, depend upon various factors, most important of which are the quantity of the beverage taken, and the condition of the consumer at the time of indulgence. Kurz and Kraepelin show by experiments that the influence of one dose of alcohol of two and four-fifths ounces does not pass away at once. Its after-effects last longer than twenty-four hours. If this dose is repeated the effect is gradually increased. After twelve days' action the effect is very apparent in "a depreciation of faculty to the extent of twenty-five to forty per cent." The effects of larger doses of alcohol, especially when repeated, will not dis-

appear after a night's sleep. It is possible that there may be a dose, the effects of which may not be noticed. This would be a difficult question to decide. This amount would vary. It would be on the average less than seven and a half grams, or less than the alcohol contained in a half glass of port.

The effects of a moderate quantity of alcohol have already been referred to. A feeling of well-being and gayety, and a condition of irresponsibility are most apt to develop at first. Even in small quantities alcohol does cause serious structural changes in various parts of the body. In a short time only, important organic changes are produced in the nerve cells of the brain and in the central nervous system.

It is well known that alcohol affects different individuals in different ways. Biggs refers to a case showing the difference in the temporary toxic effects of excessive indulgence in alcohol on two college chums. In one case it produced great disturbance in the power of locomotion, but the mind remained clear, while in the other case the mental power was much disturbed, but the locomotor apparatus was unaffected. They became companions at such times, and so helped each other out.

The one who indulges in alcoholic beverages or absinthe loses temporarily the power of good judgment and the power of resistance to any influence or persuasion that is brought to bear upon him. Phillips says that large doses of absinthe act first as an excitant, and produce a pleasant warmth which permeates the whole body. The temporary effects of absinthe itself are well shown in a case reported by Dr. Robinovitch. The drinker within the course of a few days and nights of heavy indulgence in absinthe suffered from an active and very painful delirium. The action of absinthe causes almost immediate convulsive manifestations. Magnan states that the essence of absinthe causes delirium in the dog. In one of his experiments, twelve minutes after an epileptic attack, the dog all of a sudden, without any provocation, "straightens itself upon its feet, the hair disheveled, its looks angry, the eyes injected and brilliant; it directs its looks toward any point, although there is nothing to attract its attention; it stiffens, and with neck stretched, the animal is ready to jump; it advances and retreats successively; it barks with rage and struggles furiously, grinding its teeth, jumping abruptly to catch its imaginary enemy; it then shakes its head from side to side, the teeth close together, as if ready to tear its prey. Little by little it becomes calmer, again gazes, growling, in the same direction, then is reassured entirely."

Magnan declares that "this delirious attack, so suddenly developed, explains the precocious delirium of absinthe drunkards. . . . Under the influence of small doses of the essence of absinthe, the dog stops suddenly, stupefied, the head lowered, the tail hanging down, the appearance dejected, a stranger to all that is going on. It is in a condition of *petit mal.*"

In the acute form of absinthism, vertigo and nausea are prominent symptoms, besides the effects of the alcohol. According to Amory, the immediate effects of absinthe are epileptic convulsions and nervous debility. One overdose of absinthe will produce epileptic convulsions. When absinthe is given to animals in small doses, it causes giddiness and muscular jerking. In large doses it produces epileptic convulsions, and also delirium and hallucinations. This delirium develops very suddenly, and the hallucinations cause appearances of fright and agitation. In man the giddiness and muscular jerking are not so marked as in animals. They might be even unnoticed if one were not on the lookout for them. The trembling and giddiness which appear might be thought to be due to alcohol alone. But where there is complete intoxication there are epileptic seizures which are not caused by alcohol.

Marcé, Trousseau, Pidoux, and Motet have determined that a small dose of absinthe will cause vertigo, muscular disorders, and convulsive movements. In a stronger dose it causes attacks of epilepsy more or less violent.

The attack of insanity of the absinthe drinker is very similar to that produced by alcohol, but, in addition, according to Magnan, there are often epileptic seizures, and the hallucinations are very sudden in the onset and quickly reach their acme.

In certain experiments, the administration of this drug was followed by diminished reflexes and a condition of depression. In acute, as well as chronic intoxication, after the stage of depression and diminished reflexes, violent epileptiform convulsions occurred, and a distinct increase of reflex irritability.

Amory gives a comparative table of the temporary and permanent effects of absinthe with those of alcoholic beverages generally, founded on the experiments conducted by Magnan and himself:

Absinthe.	Alcohol.
Animal perfectly well for fifteen minutes, at the least, after the ingestion, with the exception of a few muscular twitchings and a slight uneasiness.	In a very few minutes symptoms of inebriation, resulting in torpor.
Muscular agitation, commencing in the *anterior* portion of the body.	Paralysis, commencing in *posterior* extremities, and then extending to the anterior.
No paralysis.	Paralysis of both posterior and anterior extremities in succession.
Epileptiform convulsions and rigidity, resulting in a speedy death.	No convulsions. Stupor, coma, resolution, and a gradual death.
No apparent lesion, except perhaps a slight cerebral congestion, showing the cause of death to be intoxication by the poison.	Lesions of the brain and of the alimentary canal; gastritis and enteritis might have supervened, had the animals lived long enough for their development.

Differential and characteristic signs which govern the positive diagnosis between the effects of alcohol and absinthe are epileptic attacks, vertigo, early hallucinations, delirium, and inconscient delirium which sometimes follow the attack.

Simple alcoholic delirium is far slower of development. The use of absinthe produces convulsive manifestations almost immediately. The epileptiform attacks in most cases of simple alcoholism require a certain time—some years—for preparation of the brain before they manifest themselves. Absinthe "convulsions are an exact reproduction of the epileptic cycle: tonic convulsions, followed by clonic ones, rapid and short at first, then more and more slow and distant, ending in rest."

The delirious attacks of absinthe develop suddenly, just as "after the administration of certain poisons, of hyoscyamus, belladonna, or stramonium, and this rapidity in the development of the intellectual disturbances is one of the distinctive characteristics distinguishing the action of absinthe and that of alcohol."

Robinovitch says that in the case of the absintheur "the whole clinical tableau of alcoholic poisoning seems to be condensed, so to speak, within the short-

est possible space of time. The excitation of the senses, the delirium, the muscular cramps, the dizziness, vertigo, and finally the *true epileptic* convulsions set in, and follow one another in rapid succession. Where years are necessary for alcoholic morbid changes to be expressed clinically by epileptiform attacks, one year or even less, suffices to bring about *true epileptic* attacks by the abuse of absinthe."

Absinthism differs in various ways from alcoholism. In the former are manifested hallucinations and terrible dreams, enfeeblement of the intellect, and stupor, all of which may develop rapidly without any muscular tremor. If this tremor does exist, it is usually confined to the upper extremities. Absintheurs are restless at night. They suffer from nightmare, nausea, lack of appetite, vomiting, mental dullness, and sometimes delirium or mania. Mental deterioration progresses. The power of concentration of memory is impaired, and the patient loses his will power. He becomes indifferent to the welfare of both himself and his family and friends. Instead of the simple muscular tremor of delirium tremens, as is seen in the alcoholic, the epileptic fit is seen in the absinthe drinker. The fit recurs from time to time. If the habit is overcome during the early stages the fits cease. But if the indulgence is continued the intellect is permanently deranged and paralysis and death result. The morbid changes which develop vary according to the individual predisposition. Sometimes the fits are more like an attack of hysteria. Absintheurs have hallucinations of sight and hearing which do not represent a condition like delirium tremens. The victims of this habit become absolute physical and moral wrecks.

Lanceraux says that chronic absinthism has developed at the end of eight, ten, or twelve months in young women, or even girls from eighteen to twenty years of age.

Cirrhotic degeneration of the liver, kidneys, and heart is one of the effects of chronic alcoholism. Muscular tremor and incoordination are marked. The chronic form of alcoholism differs from that of absinthism, as has been said, mainly in respect to the epileptoid attacks and the early development of general paralysis; Gautier says also by the frequency of hyperesthesia in the iliac fossæ especially.

In general the effects of absinthe are like those of alcohol, but in the former they develop much earlier, and are of a severer nature. In absinthism there is also a more striking disturbance of the nervous system.

The writer takes this opportunity to acknowledge her great indebtedness to the many original investigators in the subject treated of in this paper. Their work has been freely consulted and quoted in this brief review.

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Acute Yellow Atrophy of the Liver in Pregnancy.—G. Acconci states that acute yellow atrophy of the liver is rare in pregnancy, and is generally fatal both to mother and fetus. The etiology is obscure, but the author concludes, from the study of two cases observed by him, that there is no specific cause, but that any of the factors that produce it in the male may act in pregnancy as well. It may also be the result of an autointoxication of severe type due to the pregnant condition. It may come on as the aggravation of a slight icterus or may be a morbid entity. Pregnancy generally affects unfavorably any anatomical lesion of the liver. The same toxin that affects the mother may injure or destroy the fetus. The symptoms generally come on insidiously rather early in pregnancy and advance to a condition of stupor in which the fetus is delivered. The patient continues in a deep coma until death releases her.—*Annali di Ostetricia e Ginecologia*, March, 1906.

ROENTGENOGRAPHY OF THE STOMACH.

By Max Einhorn, M.D., and L. G. Cole, M.D.,

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Rieder,[1] Holzknecht,[2] Williams,[3] and Hulst[4] have recently succeeded in taking good roentgenographs of the stomach. The method consists in giving the patient, when the stomach is entirely or partly

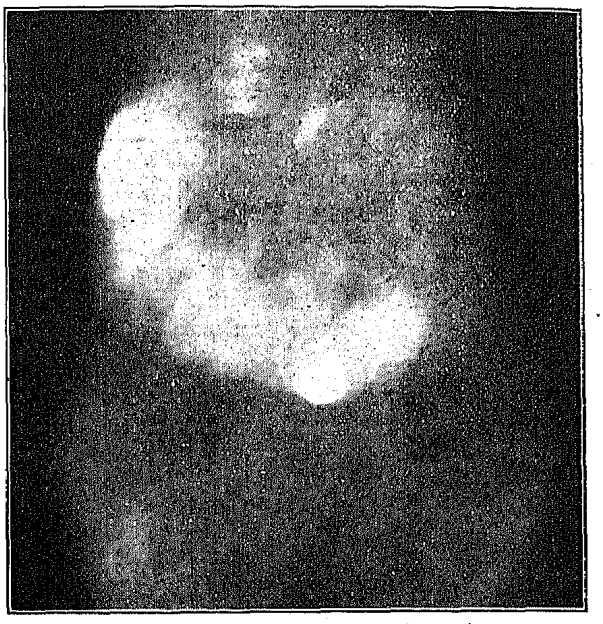

Fig. 1.—*X*-ray photograph of stomach (negative) of Dr. B., taken in standing position. The greater curvature extends just to the navel

empty, a pint of milk into which one ounce of subnitrate of bismuth has been suspended by thorough mixing. The patient is then immediately skiagraphed in a standing or recumbent posture. By

Fig. 2.—Skiagraph (negative) of stomach of patient H. standing. The stomach is somewhat dilated and prolapsed, extending a hand's width below the navel.

holding a photographic plate directly over the abdomen the Roentgen picture can be obtained. The time of exposure is usually ten or fifteen seconds.

The writers have examined a considerable number