Twenty Autopsies Held Upon Cadavers of the Insane.

By Ales Hrdlicka, M. D., Interne.

Twenty Autopsies on the Insane.

By Dr. Ales Hrdlicka.

There is no richer, more promising and more important, but, unfortunately, more neglected field of pathological research, than the insane. Insanity, disease of the central and sympathetic nervous system, will not be understood, and consequently not prevented or cured until its pathology is known!

There are many that accept or proclaim similar propositions, but practice limps and very little is done. Money is spent on great institutions wherein to confine the affected, and only the least part of effort is left for that, which would ultimately prevent their being filled.

This state of affairs is by no means American — it is universal; the insane brains are the last objects of which the greatest pathologists think, and, consequently, the appropriators. It is this general condition of affairs, that makes of the twenty succeeding reports a mass of curiosities, with here and there a fact, but without real scientific value. Without place, without instruments, all that could be registered was what the eye, unaided, could see, and that is insufficient; I may just as well have amassed two thousand of cases instead of a score, they would be just as unfitted for drawing any specific conclusions.

Still, even thus, there are facts of sufficient interest to warrant a publication of these reports. And I hope sincerely we soon will be able to do better in this respect. Before this article comes into print, there has been, probably, taken an important step forward in this state — the establishment of general pathological labratory for the State institutions for the insane, a fact mainly due to the efforts of Dr. C. F. McDonald, commissioner. May the next step be an establishment of local, well-furnished labratories in each State hospital!

Middletown, August, 1895.

Case 1 (*No.* 2613)—*General Paresis.*

History.— Age, 41 ; married ; no children. A manufacturer ; education, academic.

Cause.— Excesses, sexually, tobacco ; no predisposition ascertainable; first symptoms at 40.

Symptoms.— Forgetfulness; would appropriate others' property; distinguishes no more good from wrong; listless, dull; thinks he has large orders for his articles, and will buy boxes to ship the same in ; irritable. Indifferent in personal habits.

After admission, would not admit anything is the matter with him, though looking like a wreck. Is contented, though somewhat irritable. Tongue and lips tremulous and dry, walk slightly affected. Eats and sleeps well.

1890 (a year after admission).— Mind somewhat stronger ; takes better care of himself ; eats and sleeps well. Very weak limbs, though walking about ; slight injury (a bug bite) does not heal. Appropriates and hides articles ; untrustworthy.

1891-'94.— Occasionally bothered with accumulation of phlegm in the throat (paralysis of the constrictors). Frequent rheumatic and neuralgic pains epecially in head. Intestines sluggish. Some vertigo; few times a slight rise of temperature. Speech worse, walking difficult, bruises himself easily. Sleep and appetite good, in summer, '94, even improving. Two or three slight apoplectic seizures. Mentally weaker; irritable, and would strike and abuse other patients; cowardly; religious.

August 27, 1894.— Sudden rise of temperature to 102. At 8 a. m. two apoplectic convulsions, followed later by others. Face very dark, pupils dilated.

August 28th.— Had another attack this morning; temperature 105, pulse 152, respiration 51. Gradual failing. E. L. 3.08 p. m. High post mortem temperature.

Autopsy August 29th, 10 a. m.

External examination reveals no signs of degenration, deformity, violence or disease.

Head, symmetrical, well developed; measurements normal.

Cranium increased in thickness and very heavy, solid.

Meninges adherent in dots to the cranium and covered with

bloody sweat. Dura thickened; adhesions with the pia over the superior portions of the frontal and parietal convolutions, and also along the median line from the first frontal to the first occ. convolutions, and down to the calloso-marginal fissure in the median line. Meningeal as well as ventricular fluids much increased and slightly sanguinolent.

Both hemispheres anterior to the fissure of Rolando pale, anaemic; all behind this fissure engorged with blood.

Pia generally thickened and clouded over the third frontal, part of the first frontal, and all the parietal convolutions, and along the fissure of Sylvius way down to the Island of Reil. Over most of these places it is adhered to the brain substance, which tears very easily with it, leaving a granular, soft surface. Anterior to the fissure of Rolando both of the hemispheres appear diminished in size and the sulci are shallow.

Calcareous concretions, like grains of sand, are found in some of the meningeal adhesions.

Weight of the denuded brain, fifty-five ounces.

Cerebellum, medulla, pons and all other cerebral structures found about normal.

Thoracic organs.— Lungs, normal. Mediastinum infiltrated with fat. Heart, size normal; weight, ten ounces; the right ventricle contains a slender, pale clot among its papillary muscles.

Abdominal organs.— Stomach dilated; cardia stained with dot-like hemorrhagic spots. Intestines dilated. Liver, large, appearance normal. Pancreas hardened. Spleen normal, tough.

Kidneys somewhat softer than natural; capsule tears easily and the surface left is granular; pelvis filled with fat.

Other structures normal. All is imbeded in fat, which is abnormally developed throughout the body.

Case 2 (*No.* 3572) — *General Paresis.*

History.— Age, 44; a widower; brakeman.

Admitted July, 1892; duration of attack ca. two months.

Causes.— Excesses in smoking, drinking and probably sexually. Eloped with a female; stayed three weeks; deranged since the return.

Symptoms on admission.— Throbbing pains through the temples; pupils dilated; sleeps bad; no special physical symptoms. Behaves well, is quiet and simple; would get out of bed at night and want to go downstairs naked. Imagines constantly finding large sums of money, and returning the same to the owners. Thinks he has a contract to furnish a great number of children, and wants to do so at all hazards, but must of necessity get a wife to do it. Occasionally depressed. Later, somewhat irritable; eats and sleeps better; estimates his little estate as being worth thousands of dollars. To the end of 1892, severe bitemporal headache.

1893.— Temporal headache at times; grows weak in limbs and trembles; frequently restless. Appetite, good; sleeps well; bowels normal.

1894.— Gradually growing weaker. September, very nervous and weak; can not stand; somewhat noisy; first appearances of decubitus. Temperature slightly elevated (not above 101). October 31st, rapidly failing; temperature rises to and slightly above 103. Ex. leth. — 10:30 a. m.

Autopsy, November 1st, 10 a. m.

General examination.— The body shows all over a large fat deposit, the muscles are, however, wasted. Two large bed-sores over the glutei, and one over the left os calcis. Great toe nails very irregular and hypertrophied. Left testical hangs down much lower than the right, and is smaller. At the head of the left vas deferens, a large, pea-like, hard body is noticed.

Head normal, except in the occipital region, where the right side is more prominent than the left.

Section.— Head, scalp thick, very friable; skull-cap very thin, non-adherent; right occipital fossa more spacious than the left.

Dura mater adherent to pia all along the median line from the first frontal to the occipital lobes, and especially over the ascendant and superior parietals on both sides. There are also some weaker adhesions in the median fissure. Meningeal and ventricular fluids somewhat increased. Pia congested, especially over the posterior portion of the brain (behind the fissure of Rolando). It is cloudy over the anterior lobes, the ascendant, frontal and

parietal, and the superior parietal lobes; the cloudiness is very marked over the broader sulci. Adhesions to the brain tissue itself all over the frontal lobes, and somewhat along the median line. All the meninges irregularly thickened.

Brain appears symmetrical; weight, forty-two ounces. Convolutions well developed; gyri, deep; no marked softening. Base of the brain, pons, medulla, cerebellum and spinal cord normal. Basilar artery curved to the right.

Thoracic organs.— Heart, very flabby; fatty infiltration. Lungs, slightly emphysematous. Mediastinum filled with fat.

Abdominal organs.— Stomach, enlarged; some capillary extravasations at the cardia. Liver, enlarged; dark slate in color; friable. Spleen enlarged; tissue very dark and friable. Kidneys, large; fatty; in the pelvis of the right some rough gravel.

Bowels all dilated; the caput coli and sigmoid extremely so; walls very thin and translucent. All other abdominal organs apparently normal.

Testicles.— The veins around the left testicle somewhat enlarged and tortuous. The hard body is situated in the fibrous tissue between the head of the vas and the gland, and presents modulated, whitish, tough, very fibrous structure on section; testicle itself normal. Right testicle enlarged and hardened. Section reveals a tissue resembling closely a sarcoma.

All the internal organs thickly embedded with fat.

Case 3 (*No.* 3613) — *General Paresis.*

History.—Age, 32; married; one child, dead; a laborer, common education.

Causes.—Intemperance; probable remote; injury of the head.

Symptoms.—More or less insane for seven years; generally quiet; mental faculties sluggish; jealous; some hallucinations. Internal organs on admission (September, 1892,) normal; expression difficult.

1892.—Somewhat excitable; shooting paroxysmal pains through his temples.

1893.—Confused, incoherent; tears his clothing; very tremulous; speech difficult.

1894.—Helpless, pleasant, demented. July, failing; keeps head bent off the pillow for long periods of time. September, apoplectic attack; temperature rises high; death in coma (20th, 9:30 a. m.).

Autopsy, September 20th, 3:30 p. m.

General examination.—Body poorly nourished; musculature preserved; adipose tissue nearly absent. Few bed sores.

Head mesocephalic; depression over the posterior fontanelle and lambdoid suture. Mandibular angles, molars and frontal sinuses prominent.

Section.—Head, skull-cap very solid, heavy; on removing it some adhesions to the dura have to be severed.

Meninges covered by bloody sweat. Meningeal and ventricular fluids increased. Dura thickened and presents fibrous adhesions with the pia all along and on both sides of the median fissure.

Pia adherent, in close spots, all over the brain and can not be removed without tearing the brain substance. The membrane is full of capillary extravasations, but there are no real hemorrhages.

Brain.—The most anterior portions of both frontal lobes and the superior and the third occipital convolutions on both sides are perceptibly softened. The convolutions in general are small, the sulci shallow; the height of the convolutions from the surface of the corpus calosum is slightly less than one inch.

Other parts of the central nervous system apparently normal.

Thoracic organs.—Heart moderately hypertrophied, but this at the expense of its cavities, which are diminished in capacity; right heart partly filled with semiorganized clot.

Lungs bound by adhesions. The left apex reddish, emphysematous; the inferior lobe in the stage of hepatization (pneumonia); the upper lobe of the right lung in the same condition as the left apex, the lower two in a beginning of hepatization.

Abdominal organs.—Stomach, mucosa dotted all over with capillary extravasations. Pancreas, very hard and tough. Liver congested, almost black. Kidneys and other organs normal.

Cavities are very dry; all connective tissue structures very tough.

Case 4 (*No.* 4283) — *Acute Alcoholism.*

History.— Age, 35; single; a laborer.

Admitted November 15, 1894, in delirium tremens.

Cause.— Prolonged intemperance.

Symptoms.— Attack sudden; became dangerous, homicidal; hallucinations.

On admission, excited, trembling; characteristic hallucinations of sight and hearing. Temperature elevated; it rises to 104.

November 17th.—Very restless last night; quieted after 3 a. m.; died suddenly at 4.30 a. m.

Autopsy November 17th, 10 a. m.

General examination.— Body poorly nourished; no deformities or signs of violence; rigor mortis very marked.

Expression of face bewildered.

Pupils equally dilated; hemorrage into the lower part of the left conjunctiva.

Head large, symmetrical; depressions over both fontanelles.

Post mortem changes setting in very rapidly.

Section.— Skull-cap thin, outer depressions show inside. Scalp was hyperaemic.

Dura adheres to the skull over parts of the frontal convolutions especially on the left, and over the median line. The membrane itself is hyperaemic, thickened over the adhesions. It shows several more or less recent ecchymoses, especially over the median sinus. There are adhesions between the dura and pia all along the median line on both sides, beginning with the asc(?) frontal convol.

Meningeal fluid somewhat sanguineous and increased in quantity.

Pia hyperaemic. Slight cloudiness over some sulci. No adhesions to the substance of the brain.

Weight of the brain, fifty-seven ounces; development very good; sulci deep and gray matter of normal thickness. Ventricular fluid augmented.

(Remarks.— After the brain was taken out a great quantity of dark liquid blood ran out of the vessels.)

Posterior clinoids situated obliquely. Some smell of alcohol.

Thoracic organs.— Pericardial fluid increased.

Heart.— Both ventricles are found in a state of acute dila-

tion (no hyperthrophy accompanying). Heart and all blood vesesls filled with dark liquid blood.

Lungs.— Pleuritic adhesions on the left; both lungs emphysematous and both congested posteriorly, especially the left.

Abdominal organs.— Stomach, vessels of the cardia widely dilated; walls thin, pigmented; some capillary extravasation. Intestines hyperaemic. Kidneys, the right normal; the left enlarged and very congested; the borders of the pyramids are nearly black. Liver, much increased in size; weight, 5½ pounds. Structure anaemic.

Case 5 (*V Z*)—*Alcoholism.*

History.— Age, 44; a lawyer; single.

Addicted to alcohol for many years past; lately also to morphine and cocaine. For the last six months under medical care in an institution.

Autopsy twelve hours after death.

General examination.— Body emaciated; left leg swollen; skin of a dusky tinge. Some decubitus on the hips.

Section.— Scalp and skull cap about normal; dura somewhat adherent to the bone, and along the median sinus and parietal convolutions to the pia. Pia clouded over the lateral aspects of both hemispheres, especially the left; its vessels hyperaemic, light red.

Meningeal and ventricular fluids much augmented.

Brain and other parts of the central nervous system present nothing abnormal.

Thoracic organs.— Upon opening the thorax, the left pleural cavity is found filled with about three quarts of dark-colored, odorless fluid, in which float brown masses of exudation. Both pleurae are found covered with similar masses, of which over a pound was secured. The left lung is nothing but a tough, impermeable, small, fibrous rudiment. Right lung tough, otherwise about normal.

Heart was displaced to the median line. Pericardium contains about a pint and a half of clear fluid. Heart itself normal.

Abdominal organs.— Stomach dilated. Pancreas, intestines

normal. Liver, yellowish, hobnail surface; size, about normal; weight augmented; capsule very adherent and thickened; structure, cirrhotic; lobules clearly separated, tissue very tough, nutmeg appearance wanting. Some bile exudes on pressure. Gall-bladder full.

Kidneys.— Capsules very adherent; structure tough, glistening build much less apparent than usual. Size, slightly increased.

All other organs about normal. The abdominal cavity and the scrotum filled with clear fluid.

Case 6 (*No.* 3717)—*Dementia, Alcoholic.*

History.— Admitted October, 1892. Duration of mental derangement, eight years.

Causes.— Predisposition; intemperance.

Symptoms.— Quiet, somewhat cranky; pleasant; very forgetful. 1894, anaemic; both feet begin to swell. Moderately demented.

September.— State aggravated, pressed for breathing.

October 7th.— Failing rapidly; ex. leth. at 4.40 a. m.

Autopsy October 7th, 11 a. m.

General examanation.— Head of medium size, somewhat uneven. Ears irregular. Face, neck and upper part of the body emaciated; lower part of the thorax, abdomen and feet hydropic. Musculature meagre.

Section.— The surface of the skull irregular. Cranium very much thickened, to about twice and a half its natural size; thickness over frontal eminences and the occiput, good three-quarter inch; over the thinnest parts one-half inch. Very compact and heavy.

Membranes adherent to the cranium all over. Dura mater thickened especially over the median line. Adheres to the pia on both sides of the median fissure, from the superior parietal to below the first occ. convolution.

Pia cloudy more or less all over; its small vessels injected; it is free.

Brain somewhat darker than usual. Convolutions quite rare. No softening. Meningeal and ventricular fluids small in quantity.

Base of the brain, cerrebellum, pons, medulla, basal ganglia and the cord appear normal.

Thoracic organs.— Upon opening the thorax a large amount of yellowish water wells out from the left side, which, on further investigation, is found in a far advanced stage of hydrothorax. The cavity is full of fluid and the heart displaced to the median line. The left lung is found atrophied to about one-third of its natural size. The right lung is bound all over to the thorax by old adhesions, and is also diminished, by compression, to about two-thirds its usual. Apices emphysematous.

Pericardium distended with similar fluid as the pleura.

Heart enlarged. Both right cavities dilated; both left dilated and somewhat hypertrophied. Tricuspid insufficient—post. cusp deficient and adherent. Mitral infiltrated with large deposits of calcareous salts. The bases of aortic semilunars infiltrated similarly. Pulmonary semilunars normal.

Abdominal organs.— Stomach, diminished in size to about two-thirds its natural. Walls thickened, mucous membrane found in a condition of chronic inflammation.

Liver.— Increased in weight and consistency. A pigmented body, the shape of a button, found on the posterior surface of the upper border of the right lobe.

Intestines full throughout; caput coli dilated.

Pancreas very tough; spleen similar.

Kidneys both much enlarged. The right found to be nothing but a trilobed, thin-walled bag of water, without any trace of kidney tissue proper. The mouth of the right ureter occluded by a black, hard, but drolling under pressure, irregular, uric acid calculus. Left kidney about twice the normal size, normal.

Moderate hydrocele.

All the other organs normal.

Case 7 (*No.* 4320)—*Dementia, Terminal.*

History.—Admitted January, 1895. Duration unknown.

Age, 83; a widower; a carpenter.

An ex-convict.— Wrecked a train.

Causes.— Age, mode of life; predisposition (?)

Symptoms.— Can give no account of himself; mental faculties generally dulled. Paresis of lower limbs.

After admission.— Will answer but little and incompletely; somewhat resistent and profane; deceitful and malicious; incoherent. Denies ever having done anything wrong.

April.— Demented, filthy.

24th.— Drops suddenly dead in bed after his shirt has been changed.

Autopsy.— General examination: Body fairly nourished. Skull unsymmetrical, larger behind and on left and in front and on right.

Section.— Scalp very resistant.

Skull of about usual thickness; dura mater adherent over the fore part of the cerebrum. Dura adherent with pia all along the median line, especially over the asc. and sup. parietal convolutions; no adhesions of pia to the cerebrum.

Brain poorly developed; convolutions rare. Olfactory nerves entirely degenerated. Some bloody liquid in the ventricles.

Thoracic organs.— Lungs normal.

Heart, ruptured; a very small opening, just admitting a usual silver probe, on the outside in about the middle of the left ventricle; inside the opening is much larger, discolored, and shows some dissection. The walls of the heart, without exception, are in good condition; valves normal, and so also the great blood-vessels.

Abdominal organs, nothing unusual.

Case 8 (*No.* 3442)—*Paranoia.*

History.— Admitted, March, 1892. Duration of mental disorder, two years. Age, 44; single; no occupation.

Causes.— Predisposition; exciting, physical disease.

Certificate.— Onset gradual; delusions of persecution, with a sexual tinge.

After admission.— Persecuted, especially by women; worrying; nervous; sleeps poorly; apprehensive; depressed evenings; fretful; stirs others.

Very little change till 1895; when the patient is rather better; he behaves well; writes, draws, is quiet; but his old delusions are still present, though covered.

March 11, 1895, 9:30 p. m.— Found dead at his bedside.

Autopsy, March 12th, 11 a. m.

General examination.— Body very well nourished. Face pale. Two slight bruises on the left frontal portions of the head. Rigor mortis feeble.

Only the thorax permitted to be opened.

Fat layer well developed; musculature feeble.

Lungs somewhat pale, normal; left bound by old pleuritic adhesions.

Pericardium distended, dark, fluctuating; on opening, a large amount of bloody serum wells out. On opening the sack completely a very large red clot of blood is found around the heart.

The pericardium forms a sheath-like covering of the aorta, from the heart up to the branching of the great vessels. This sheath is also extended and presents, on its anterior surface, about an inch above the auriculo-ventricular junction, a vertical, irregular slit of about one-third inch in length. The bag slit open, more bloody serum and clot escapes; at the base of it, however, and in front, there is a quite large, flesh-like, organized clot, surrounded with the injected in this place and discolored walls of the bag to which, as well as to the aorta, it is adherent. There is some, apparently not a recent, infiltration of the tissues in front of the bag (auricles).

Aorta is slightly dilated and unevenly collapsing for about two and a half inches above the orifice, and presents, in about the midst of this space, anteriorily and slightly to the right, a very much similar in every respect slit to that found in the bag of the pericardium. The aortic orifice is small; valves normal; walls are thinned, but becomes normal just before the arching. The endothelial layer is of a slightly yellowish color, and uneven, presenting the appearance as if some heavy liquid had been poured down the walls from above and corroded them (fatty degeneration-specific (?)

The heart is somewhat enlarged, with considerable fat on the outside, and somewhat softer muscle. Some clots in the ventricles. Both anterior flaps of the mitral somewhat deficient.

Case 9 (*No.* 3924)—*Epileptic Insanity.*

History.— Admitted 1889. Duration, since birth (epilepsy).

Cause.— Predisposition.

Age, 22; married; 3 children; a housewife.

Symptoms. — Religious; excitable; suicidal; at times abusive. Always feeble.

Died suddenly, after a severe convulsion, February 7, 1895, 1 a. m.

Autopsy (February 7th, 11 a. m.).

General examination.— Body feeble, fairly nourished; no evidences of injury; rigor mortis slight.

Thoracic organs (head not opened).— Heart ruptured on the anterior side of the right auricle. Several pus-sacks found in right auricle and one in left ventricle; the tissues of the right heart very soft and boggy.

Abdominal organs.— Liver engorged with very dark blood.

Other organs normal.

Autopsy by Dr. Ashley.

Case 10 (*No.* 4208)—*Melancholia, Acuta.*

History:—Age, 28; single; a coachman. Admitted August 4, 1894.

Causes.—Gonorrhea, orchitis; loss of work.

Attack quite sudden. Became violent, excitable, and again depressed. July 18th attempted suicide by shooting himself in head and abdomen; since then restless, noisy and profane, especially at night.

On admission quite reasonable, but somewhat depressed. Is very sensitive at times and then the least motion or touch gives him pain. At times appears to be in a kind of stupor and does not clearly comprehend what is said to him. Physically much reduced; tendency to decubitus. Wounds healing, especially that in the abdomen.

Later.—Is anxious to get well; says he will never try to injure himself again. Physical condition improving.

October.—Considerable gradual mental improvement. Thirteenth, despondent, would be dead; thinks he can not get well. Twenty-ninth, two epileptoid convulsions, with prolonged sleep after each. Does not know he had any attack.

December 17th.—Third convulsion, general; long sleep after.

January 1st.—Another convulsion. Several more within this month. Wound in the head does not heal. Has headaches, is irritable, unreasonable.

February.—Weak, depressed, refuses to eat, fault-finding; sharp pains in the right temple.

March.—Headache; groaning, sullen; sleepy; a good deal of nausea.

March 5.—Operation; three large pieces of bone found loose around the margins of the wound and removed. After operation patient is generally relieved.

Improving steadily until March 10th, when a severe headache set in; then well again until March 18th. At 8 p. m. that day, without any provocation or warning, the patient begun to have convulsions, general, almost continuous, though not very severe; he became unconscious, begun to fail, the temperature rose to 103.5, and he died at 11.55 p. m. The only premonitory signs were, at 4 p. m., when his wound was dressed, slight vomiting, after which he remained somewhat weak and dull.

Autopsy, March 19th, 10 a. m.

General examination.—Body moderately nourished, symmetrical; face very anaemic. Rigor mortis very marked. Scrotum loosely pending, reddish-brown.

Signs of injuries.—A pouch-like, healed scar on the right side of the abdomen, two inches above the ant. sup. spine, in McBurney's line.

A rounded, with extruding tissues filled opening on the right side in the skull, one and a quarter inches above the tip of the mastodi process and two-thirds of an inch behind the junction of the external ear with the scalp. From this leading upwards and forwards an irregular, healed cicatrix (oper.).

Section.—Scalp thick, well nourished. In the immediate sur-

rounding of the wound and upward, along the incision line, subcutaneous tissues thickened, discolored light brown, and soaked with thick pus. Discoloration of the scalp-tissues from the wound all over behind. A bullet shell found imbedded in the scalp one-third of an inch below the lower margin of the wound.

On removing the periosteum, the opening in the skull is found to be almost regularly circular, of one-third of an inch in diameter. The edges are slightly serrated, but thin and dull. Running upward and forward, for two inches and a half, is a fracture of the skull, with both ends healed and the middle open, admitting the edge of the scalpel. Running backwards and downwards, in almost the opposite direction of the first, is a second fracture, all healed, and traceable for about one inch distance. Through the opening itself protrude, like a bunch, some velvety, but tough tissues; there is no discharge.

Skull-cap very thin, but mostly compact. Ethmoidal rostrum very high (three-quarters of an inch). No adhesions, no other signs of injury. The opening presents the same characteristics from inside, as it did from outside.

Dura hyperaemic; through it loom greatly congested vessels of the pia. Meningeal fluids diminished. Adhesions, moderate, along the margins of both hemispheres and the median fissure, from the first frontal to the first occipital convolutions.

Brain uniformly discolored flat-yellow, in consistency rather hardened on the surface. Right tempro-sphenoidal lobe soft; when partially lifted up, it is found surrounded by a small quantity of pus, which is similar in character to that found on the outside of the skull.

Around the wound, to the extent of three inches vertically and two antero-posteriorly, the dura is firmly adherent to the pia and with this to the brain substance, which appears dark-yellow. On trying to extract the brain with these adhered membranes, a slight tension induces a break in the brain tissue of the temporo-sphenoidal lobe, and from this opening wells out about an ounce and a half of thin, greenish, odorless, flocculent pus, and with it another small shell of a bullet. On closer examination almost the whole

temporo-sphenoidal lobe is found destroyed, what is not pus being softened. In the direction of the wound the finger detects some hard, irregular, firmly imbedded body.

The whole brain, minus the pus escaped, weighs fifty-six ounces.

The base of both brains very hyperaemic. Left half of the pons larger than the right. Further examination of the brain shows the following :

On cutting down to the hard body mentioned above, another, double cavity as it later proved, was opened, and from it escaped about twelve drachms of thick, also odorless, grass-green pus. These cavities occupied the position between the termination of the fissure of Sylvius, gyri supramarginal and angular and occip. occ. anter., and above the sulci temporalis superior and occip. lateralis. They did not communicate with the lateral ventricle.

The wound itself was situated in the first temporal convolution, underneath and behind the lower termination of fis. Sylvii, and extended for an inch and a quarter into the brain substance. The course of the wound was almost horizontal, and filled up with connective tissue; at its terminus were lodged, also enveloped in fibrous tissue, four small fragments of the skull, and the lower crushed half of a thirty-two calibre pistol bullet.

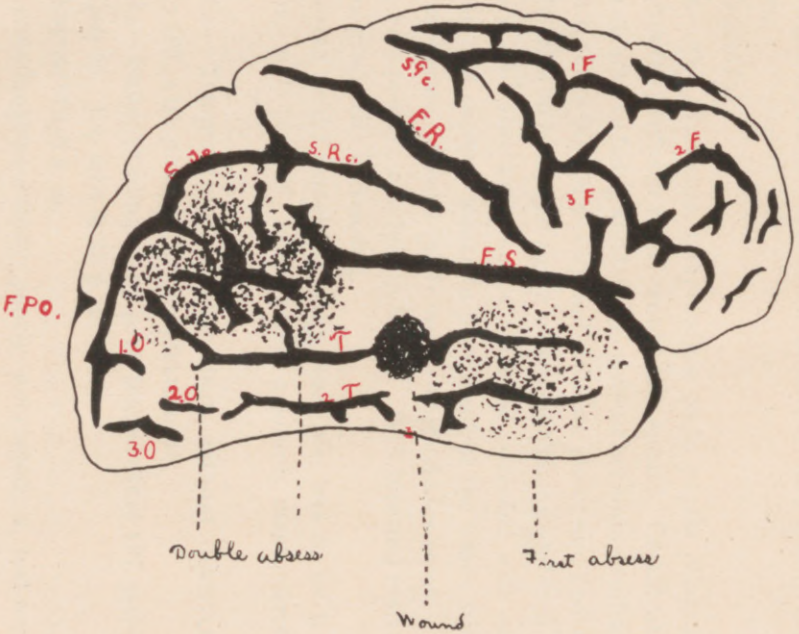
Gray matter of the cerebrum was found pale, rather thin. Ventricles were filled with clear fluid. Puncta vasculosa very numerous.

All other structures of the central nervous system about normal.

Thoracic organs.— Heart and great blood vessels normal.

Lungs, free, congested, especially the left, in a state similar to asphyxia. In the left pleural cavity about a pint of sanguinolent, dark, odorless fluid; no adhesions.

Abdominal organs. — The scar in the right hypogastrium extends straight down through the muscles and the peritoneum, presenting in its whole course a dark discoloration. The internal mark of it lies right over the head of the coecum—but neither this nor the underlying, very long appendix, nor any of the intestines or structures in the neighborhood show the slightest signs of injury, nor could the bullet be found after the most careful search.


S.Fc.
1 F
F.R.
S. Rc.
2 F
3 F
F.S
F.PO.
1 O
2 O
3 O
1 T
2 T
Double abscess
Wound
First abscess

Spleen, dark, congested, considerably enlarged; weighs fifteen ounces.

Kidneys congested. All other internal organs about normal.

Both testicles in a state of subacute inflammation.

Case 11 (*No.* ..)—*Melancholia, Chronica.*

History.—Age, 40; single; a laborer; education and family history unknown.

Cause.— Doubtful.

Symptoms.— On admission, temperature 98.6; pupils dilated; bowels constipated; refuses food; would not speak. Certificate speaks of his attacks as being sudden, the patient becoming violent and dangerous, throwing his money and clothing about and breaking bed. He tried to hide, and again was seen chasing children.

Is depressed and obstinate; keeps his head covered; will eat only rye bread and cheese; wants to pray most of the time; will not take his medicine. Sleeps fairly well; masturbates some.

Resistive; eats poorly; careless in habits. Will bite and resist. Masturbating gradually increasing.

1894. — Losing flesh; demented; very resistive; has to be fed with the tube; soils his bed; never utters a sound; masturbates much.

August 4th.— Temperature suddenly rises, without discoverable cause, to 105, with pulse of 120, respiration, 40.

August 6th.— Patient failing. At 6 p. m. temperature 107, pulse 130, respiration 45. Ex. leth. 8:35 p. m.

Autopsy August 8th, 9 a. m.

External examination.— Body poorly nourished; a bed-sore over the right hip. Penis subnormal in size. Measurements of the skull about normal.

Head.— Scalp thin. Skull cap uniform, normal. Dura mater very vascular, engorged; vascularity most marked over the parietal convolutions, especially on the left, and over the anterior two-thirds of the left hemisphere in the median line. Adhesions of the membranes over the super. portion of the left asc. frontal and

parietal. The adhesions were irregular, blot-like, the anterior one on the left, the largest, exceeding in size a dollar. The pia in these places of adhesion was thickened, corroded and granular, but free from the brain all over. The whole pia very vascular.

Brain tissue appears normal, both in color and consistency. Both halves are symmetrical; the anterior lobes are small, the convolutions all over large, shallow.

The quantity of meningeal and ventricular fluids was rather subnormal.

Basal gangalia, pons, medulla, cerebellum and spinal cord normal.

Thoracic organs.— Heart, small, flabby, fatty infiltration; empty. Valves normal.

Lungs.— Apices much congested. Firm pleural adhesions on the right.

Abdominal organs.— Stomach, congested, otherwise normal. Liver very dark; attachments tenacious.

Spleen, wasted, small; capsule shrunken and wrinkled all over the surface; pulp tough.

Pancreas normal. In the neighborhood of the tail of the pancreas there are, imbedded in the mesentery, about twenty fair-sized calcareous concretions (weighing together about half an ounce).

All other organs about normal; membranes generally toughened.

Case 12. (*H. M.*)—*Melancholia, Chronica.*

Age.— Ca. 80; married.

Causes.— Some predisposition, otherwise unknown.

Symptoms.— Those of protracted depression of spirits, with considerable clearness of mind remaining.

Autopsy fourteen hours after death.

General examination.— Body fairly nourished; no abnormalities. Rigor mortis not very strong.

Section.— Scalp and skull about normal. No adhesions of the

dura to the skull; it adheres to the pia somewhat, along the median sinus, especially over the asc. and sup. parietal convolutions.

Pia cloudy, moderately, on the lateral aspects of both hemispheres. No adhesions to the brain.

Brain well developed, presents nothing abnormal; fluids small in quantity.

Base of the brain normal. All larger arteries are found in advanced atheroma; posterior half of Circle of Willis entirely obliterated, cord like.

No hemorrhages.

Thoracic organs.— Heart, hypertrophied, of about twice the normal size and thickness; this is especially true of the left cavities. Introitus aortae and semilunar valves — one mass of infiltrations; the orifice is considerably narrowed. Aortic walls, and those of larger arteries full of calcareous patches. Intima presents many yellowish spots.

Lungs normal.

Abdominal organs.— Everything normal, except the iliac (r.—) region, which presents signs of past inflammation.

Case 13 (*No.* 3135)—*Dementia, Terminal.*

History.— Admitted, April, 1891. A second attack. Duration unknown. Age, 45; single; pail-maker.

Cause.— Unknown.

Symptoms before admission. — Excitable; at times violent; talks very little, and mostly to himself; thinks he used to be very rich; somewhat filthy.

After admission.—Ideas of inferiority; will talk to himself; complains of feeling badly in the abdomen.

1892.— Demented; masturbates; filthy.

1893.— Works on ward; talks to himself; quiet.

1894.— Masturbates; some vomiting; pain and cramps in the epigastrium; occasionally an elevation of temperature.

1895.— Very pale; cachectic; vomits often; complains occasionally of pain over the stomach. Eats much, but grows thinner.

March.— Getting worse; moans at night; complains of pain. Eleventh.— Suddenly failed, and died at two a. m.

Autopsy, March 12th, 10 a. m.

General examination.—Body symmetrical, but cachetic and very emaciated; abdomen sunken; traces of decubitus in several places. Neck full of scars from scratching himself for some time before death. Rigor mortis very strong.

Section.— Scalp very thin, fast adherent. Skull-cap thin; symmetrical; occipital bone thick; torcula very prominent (corresponding to a depression over the posterior fontanelle on the outside).

Dura of normal thickness; adhesions to the pia just over the ridges of the hemispheres along the med. sinus, most marked over the sup. parietal conv.

Pia hazy, distended with fluids; this is clear and cyst-like within the layers of the membrane; only small amount welling out at each puncture. No adhesions to the brain.

Brain well developed, heavy and apparently normal; olfactory nerves entirely degenerated. Gray matter pale throughout.

Ventricular and spinal fluids augmented.

Thoracic organs.— Lungs flabby; both apices present old scars and are bound by adhesions. Oesophagus very much thickened (one-fourth inch), especially below the arch of the aorta. Substance soft.

Heart, normal.

Abdominal organs.— Abdominal muscles, especially below the navel, discolored, dark slate-green.

Peritoneum somewhat adherent to the abdominal walls.

Intestines of a dull, darkened color; filled with faeces. Masses of dirty brown exudation lie on and among them in the lower part of the abdomen.

Stomach considerably thickened; very slimy; no stricture.

Duodenum.— The external wall of the first part, the common duct, the bile ducts, and the gall-bladder, are one white, glisten-

ing, almost cartilaginous mass of scirrhus. The center of the mass is the gall-bladder, of which nothing is left, but a small, empty cavity. The pelvis of the liver is involved and adheres to the whole mass; there are some metastases throughout the organ, mainly around the part directly involved. The mass adheres also to the peritoneum around to a part of the anterior wall of the aorta and to the right ureter.

Abdominal glands, normal.

Spleen, muscle-color; normal.

Pancreas, normal; duct somewhat implicated.

Kidneys, small; anaemic.

Other organs, normal.

Case 14 (*No.* 2835)—*Mania*, *Dementia*, *Term.*

History. — Age, 50; single; a housekeeper and seamstress. Admitted, January, 1890.

Causes of insanity, unknown. Insane more or less since 1868.

Symptoms on admission. — Excited; violent; destructive; foul and obscene; memory very poor. Will not eat; sleeps poor. Answers seldom and not unless it pleases her.

1892, January 12th.— Pain in the stomach all the morning.

September.— Mentally somewhat better; no physicial distress.

1893.— No marked change; periods of excitement; occasionally noisy and boisterous.

1894. — Noisy; profane; obscene. July 7th, vomited nearly all night (no blood). July 10th, vomits her food since the 7th. August 21st, vomited supper and breakfast; pale, not eating well. August 30th, vomited dark, clotted blood at night; some pain. September, eats but little—clam broth and milk. Fifth, vomited some bright red blood; looks cachectic. Bad taste in the mouth. Liver seems to be enlarged. Seventh, vomited much in the night, bloody; this morning more blood; retains nothing on her stomach. Pulse weak, 120 degrees. Eighth, almost in collapse; urine stains clothing yellowish green; no food retained; bowels do not move; seems to have pains. September 9th, gradually failing all night; ex. leth. 7 a. m.

Autopsy September 9th, 9 a. m.

General examination.—The whole body is of a yellowish, semi-jaundiced color. No abnormalities; paniculus adiposus well developed.

Section.—Only the abdomen was permitted to be opened. The fat layer over an inch thick all over. On division of the peritoneum a solid, large, whitish mass extrudes from the cavity above the umbilicus; below this nothing is seen but fat. On palpation this mass is found to involve the end of the lesser curvature of the stomach, the duodenum, the pancreas, and the bile-ducts. It is very hard, irregular, and composed of several larger aggregations, among which can be felt many variously enlarged and hardened mesenteric glands. On trying to remove this mass, it is found to be firmly adherent, along its whole posterior surface (ca. 7 in.) to the ant. spinal ligaments and the spinal periosteum; the aortic walls are implicated for several inches in these adhesions.

Extracted out of the abdominal cavity, the mass is found to be a scirrhoid tumor weighing ca. three pounds and involving the following structures: Half to the lesser curvature of the stomach, in the form of closely neighbouring, irregular nodules; the pylorus, in the form of a concentric ring of about half an inch thickness and great toughness; the first two thirds of duodenum in the form of very profuse, disseminated nodules in the middle coat, the outer coat being involved entirely and left on the main mass in the other effort at separation; the duodenal third of the biliary, the whole pancreatic and common bile ducts—all involved but the mucosa; the pancreas—one scirrhous mass, nothing being left of the organ itself but some softened, reddish remnants; the mesenteric glands and the mesentery itself between the stomach and the umbilicus—as varying in size, very numerous small masses and nodules; about six inches of the aortic wall, as an infiltration of the fibrous and muscular coats.

Stomach presents no gross lesions, except as indicated above. The pylorus transmits the little finger, is ulcerated and contains a bloody clot.

Liver.—Normal in size and consistency, but of a yellowish color throughout. On the ant. inf. surface is a large scar one and one-half inch in length. The upper border of the right lobe and its ant. sup. surface present each a whitish scirrhous nodule, of the sizes of a hazel nut and a bean respectively. The gall-bladder dilated and full of inspissated bile; a small scirrhous nodule on its surface.

Intestines filled with nearly black, semisolid material.

Spleen, very much diminished in size; weight, three ounces. Consistence and color normal. Kidneys normal. Mesentery very fatty.

Pelvic organs, uterus, virginal; consistence very tough; cavity filled with gelatinous matter and three nodules (submucous), which show scirrhous structure.

Ovaries, left, very rudimentary, no larger than a pea; right of the size of small chicken's egg and nodular throughout; section shows it scirrhous.

Thoracic organs.—Heart surrounded with fat, otherwise normal.

Lungs, apices adherent; the whole organs smaller than natural, pale. Apices, especially the left, show old cicatrices.

Bronchial glands all scirrhous.

Subcutaneous glands unimplicated.

Case 15 (*No.* 4115)—*Imbecility.*

History.— Admitted April, 1894. Duration of mental disorder, forty-five years.

Age, 55; single; no occupation.

Causes.— Traumatism of the head (?).

Symptoms before admission.— Dull, listless, speaking very little; irritable; addicted some to masturbation. On admission and after, emaciated and flabby; depressed; very reticent; easily angered; simple; memory poor. Answers very slowly. Remains in any position placed, but inclined to do reversely as told. Reads, but will thus only about horrible events, fires and funerals. Refuses food at times; is becoming somewhat filthy.

Temperature rises. The patient is very pale and weak, indifferent. September 21st, begun failing and died at 8:05 p. m.

Autopsy September 22, 10 a. m.

General examination.— Body tall, slender, poorly nourished; no signs of injuries or deformities. Head mesocephalic, regular, except a moderate depression over the frontal fontanelle. The lower half of the ear is larger than the upper. Measurements somewhat small, but normal.

Section.— The skull-cap normal; on removing it, the dura is found to be adherent all along the median line and also in few situations over the lateral walls. The dura itself adheres to pia along the median line from the frontal lobes to the occipital — the second and third frontal convolutions being alone spared. The adhesions are especially fast over the sup. parietal and first occipital convolutions, on both sides.

Pia free; some capillary extravasations into its layers in few of the lower sulci, especially the right Island of Reil. More or less cloudiness over the sides and top of both hemispheres.

The cerebrum appears normal, but the surface is very friable. Convolutions well developed.

Other parts of the central nervous system about normal.

Thoracic organs.— Heart somewhat enlarged. Right cavities filled with whitish clot, that extends for about three inches into the pulmonary artery. Left cavities both hypertrophied, mitral valve irregular, somewhat deficient, infiltrated with calcareous deposit.

Lungs.— Light in color, emphysematous, tough in structure: old adhesions on left.

Abdominal organs.— Stomach, walls thin, cavity somewhat dilated. Liver and pancreas normal. Spleen diminished in size, pulp brownish, friable. Right kidney in the stage of extreme hydronephrosis, the whole kidney and the pelvis are reduced to a tough, fibrous bag composed of many large chambers and containing about four ounces of whitish urinous liquid. There are left only the slightest traces of kidney tissue. The right ureter dilated

for about an inch, and there obtruded by a uric acid nephrolith. The left kidney hypertrophied, structure normal.

The bladder very hypertrophied, its walls measuring a fourth of an inch in thickness; the mucous membrane is dark.

All other organs normal.

Case 16 (*No.* 3617) — *Idiocy.*

History.— Admitted September 19, 1892.

Age, 40; single; no occupation.

Duration of present condition thirty-seven years; she was bright until her third year.

Alleged cause.— Traumatism of the head (fall on the back) at three.

Symptoms, before admission.— Filthy; does not speak; silorrhoea. No mind. Grimacing occasionally. Does not take the slightest care of herself. On admission — physical condition fair. Subject to outbursts of temper. Music excites her very much. Filthy; restless; salivates continually. Has to be fed; frequent diarrhea.

1894.— Weak, pale; subject to diarrhea on the slightest provocation. Feet swell at times.

1895, January 2d.— Vomited several times; abdomen bloated. Later, vomited some blood and passed same from bowels.

Failing rapidly; ex. leth. at 2 p. m. (January 3d.).

Autopsy January 3d, 5 p. m.

General examination.— Body small, very emaciated, cachectic. Upper alveolar processes very protruding. Mammae rudimentary. Abdomen full, tympanitic over the geater part. Genitals small, hymen intact. No injuries; no decubitus.

Section.— Scalp thin, no scar. Skull very solid and about half thicker than natural; no adhesions between it and the membranes.

Dura mater very resistant; very few weak adhesions between it and the other membranes.

Vessels filled with liquid blood; brain somewhat anaemic.

Pia very resistant, non-adherent.

Brain small, hardly two-thirds of natural (thirty-seven ounces), harder than natural. Meningeal fluids very small in quantity. Convolutions long, winding, deficient; scarce on the surface of the hemispheres; in the median fissure, on the lower surface, and in the Island of Reil, the convolutions are almost obliterated, nothing being left but shallow tracings of the sulci.

Cerebellum similar to the cerebrum; vermes almost absent; transverse furrows very shallow, inclosed convolutions small, substance hardened.

Gray matter all over very thin and pale.

Pons, medulla and cord all small, resistant, and covered with very closely adhering, fast pia.

Thoracic organs.— Only the meagrest traces of adipose tissue found on section, both under the skin and around the internal organs.

Heart, small, right cavity filled with a recent clot.

Lungs almost white in color, crepitating strongly.

Abdominal organs.— Intestines; rectum, colon, caput coli, appendix and ileum normal, anaemic; the jejunum is found interrupted in its normal condition by two dark-red, full looking portions; the first of these is very near the duodenum, is nearly a foot in length, and dark red, the color intensifying toward the middle; the second portion is about two feet lower, is about one-half longer, and in the same condition. The blood vessels leading to these two pieces of intestine are prominent and dark — filled with coagula. The intercalcated piece, as well as the other parts of the intestine are normal and without any unusual condition of their blood vessels.

The affected portions tear very easily; upon section, the dark red color is found to pervade throughout; the walls are at least twice as thick as usual; the valvulae conniventes are prominent and thickened; and the mucous membrane in general appears nude—without any localized abrasions or ulcers. In the cavity of these pathological portions of the intestines is found a small quantity of reddish thick fluid.

The condition is that of thrombosis with consequent gangrene,

restricted to two portions of the intestine. There was no adhesion of the serosa.

Duodenum normal, and so is the stomach; in this latter about an ounce of clear, limpid fluid. The coronary vein of the stomach, however, is found filled with a solid clot, which makes it very prominent; and in the same condition are found the veins of the pancreas, that of the spleen, part of the branches of the sup. mesenteric and, to some extent, the vena portae—an almost general, antemortal thrombosis of the portal system of veins.

Liver and spleen normal in size, but with consistency increased, especially the liver, which is decidedly cirrhotic, very heavy and anaemic. Pancreas enlarged, especially the tail, and hardened. On section a brown, hazel-nut like, oblong body, softened in center, is found in its interior.

Kidneys.— Right kidney considerably enlarged, furrowed on the surface, pale. On section it is found pale, but with no apparent structural changes. The left kidney is one large bag of very white, fluid substance, resembling somewhat pus, and without any trace of tissue proper left. No stone.

Pelvic organs:— Ovaries very small, equal, tough. Uterus, virginal; substance slightly softer than natural, transset with small fibroids of all the varieties (as to location).

Case 17 (*No.* 3039) — *Epilepsy, Dement., Term.*

History.— Admitted December, 1890. Duration ——?

Age, 63; married; a seaman.

Causes——?

Symptoms.—Certif. Conscious of his condition; memory defective; dangerous after attacks. Naturally bright and fluent in speech, well educated; can not read clearly now.

After admission.—Acts like one thoroughly tired out and glad to be in bed. Fits not very frequent, but occasionally very hard. Addicted to masturbation.

Later.—Great number of attacks, sometimes over forty in a day; when free of them, is quiet, pleasant, industrious.

1892.—Some mania. June and July, works, quiet, pleasant; still many fits. December, talks in ambiguous manner and shakes his head in a knowing manner in speaking.

1893-94.—Many light fits; good-natured, cleanly, pleasant, working; at times seems in deep thoughts.

1895, January.—Convulsions number about twenty-five per day. On 9th, the temperature rises to 104, and continues higher; Ex. leth. January 17th; before death restless, muttering, incoherent; could not swallow.

Autopsy, January 17th, 4 p. m.

General examination.—Body powerful, symmetrical, very well nourished. No signs of injuries; slight decubitus in the left armpit. Musculature and osseous system very strong.

Rigor mortis marked. Abdomen inflated.

Section.—Scalp of normal thickness, but very resistant, so it can hardly be reflected.

Skull thicker than man in white race. No signs of past injuries. Left frontal portion somewhat smaller and thicker than the corresponding right.

Dura Mater adherent to the skull-cap to the extent of about an inch all along the medium line. It is covered with bloody sweat, and is found united by very firm adhesions to the subjacent membranes all over the left frontal lobe and for more than half an inch on both sides of the medium sinus from the frontal to the occipital lobes. These latter adhesions can be severed with difficulty only; they are fibrous and very resistant; those over the left frontal lobe can not be separated at all and the meninges, which are practically grown together here, can only be removed with parts of the brain-tissue. Some slighter adhesions are found within the medium fissure, but in the region of the left anterior lobe they are just as firm as the surface; and almost all over the inferior surface of the large brain (base). Meningeal and ventricular fluids augmented.

The blood-vessels of the pia are engorged; the membrane itself

is duller all over, more so on the left; a spot, in size of a silver dollar, over the top of the asc. front. convol. is very cloudy and opaque. Here the pia is slightly adhered to the brain, and so it is, but in a much higher degree, over the frontal lobe.

The brain is well developed and heavy. Cranial nerves intact. Left anterior lobe, and slightly the whole left hemisphere anterior to the occ. convolutions, softened; occ. on both sides appear to be the healthiest parts of the brain.

Cerrebellum as a whole markedly softened. Basal ganglia, pons. medulla and spinal cord large, apparently normal; basilar artery very wide.

Thoracic and abdominal organs were all found almost normal. The spleen was diminished in size, and the heart slightly hypertrophied. Rib-cartilages ossified.

Case 18 (*No.* 1587.)—*Paranoia—Dementia.*

History.— Admitted, January, 1885. Duration of mental disorder, ca. four years.

Causes.— Remote predisposition; injury to the head when a baby.

Symptoms, before admission.— Hallucinations of hearing; writes letters and proposals to ladies he is but little acquainted with; speech disconnected; symbolical. Considerable masturbation.

After admission.— Physically well. Face flushes readily; pupils commonly dilated. Confused in actions. Masturbates.

1887.— Pleasant; demented.

1888.— Mischievous, untrustworthy; otherwise no change. Some sexual excitement.

1889.— At times irritable, cross; masturbates. No material change before 1895.

1895.— Kleptomaniac tendencies; masturbation worse; no ambition; anaemic.

June.— Elevation of temperature; it keeps up more or less till 18th, when the patient succumbs at 4:05 a. m.

Autopsy.— General examination — Body well nourished, but very livid; much loose fat in the integument, especially over the abdomen; rapidly advancing decomposition (six hours after death).

Section.—Scalp and skull about normal. Dura adherent to the skull and to the pia along about the middle three-fifths of the median line, especially over the sup. parietal convolution Pia free, its vessels injected; meningeal and ventricular fluids somewhat augmented.

Brain, dark, frail; especially the pons. medulla and cerebellum. many puncta vasculosa in the white substance.

Thoracic organs.— Heart, small, normal.

Lungs, normal; lower lobes in state of hypostatic congestion.

Abdominal organs.— Nothing unusual, except about the stomach; which is very narrow, not much more spacious than the colon, with walls uniformly thickened.

Case 19 (*No.* 3339.) — *Dementia, Senilis.*

History.— Admitted November, 1891; first attack; duration of case five years.

Age, 85; a widow; no children; no occupation.

Causes.— Unascertainable

Symptoms.— Irritable, suspicious; threatened suicide and homicide; ideas of persecution; scolds, threatens.

April, 1893.— Sight disturbance; sees an animal on the ceiling; other hallucinations of sight.

May, 1893.— Dyspnoea, spells of sinking; diarrhoea, cramps in legs.

Behavior pleasant, with occasional scolding spells.

July, 1893.— Some hemorrhage from the bowels.

1894.— Quiet, gentle most of the time; sometimes abusive and suspicious.

January, 19th.— Some dyspnoea, gradual fall into unconsciousness following; died, without recovering her consciousness, January 20th, 3 a. m.

Autopsy January 21st, 9 a. m.

General examination.— Body fairly well nourished; skin of a yellowish hue; no abnormalities. Slight decubitus. Rigor mortis mod.

Section.— Abdomen and thorax opened first. Tissues flabby.

Abdominal organs.— Liver and kidneys anaemic, especially the latter. Spleen small, of a very dark chocolate color. Other organs about normal.

Pelvic organs.— Uterus and its neighborhood in a state of fibroid, both ovaries in that of cystic degeneration. The body of the uterus very small, atrophied, os uninjured, walls filled with small fibroids some of which resemble cartilage. The position of the left tube is occupied by a fibroid larger than the uterus itself. In place of the left ovary there is a cyst, larger than a goose egg, enclosing a clear fluid. The right ovary is occupied almost entirely by two small cysts, there being but little of the ovarian tissue left between them.

Thoarcic organs.— Lungs normal.

Heart.— Considerably hypertrophied; right side slightly dilated; left ventricle very much thickened, to more than twice its natural thickness; mitral valve thickened; aortic valves and the whole introitus aortae infiltrated with calcareous deposits. Aorta mod. atheromatous.

Head.— Scalp very flabby; skull of a natural thickness, depressed over the lambdoid suture. Dura adheres to the skull along the median line; in the same situation it also adheres to the pia; these latter adhesions are especially marked over the sup parietal and first occipital convolutions, and more on the left than on right.

Meningeal fluid much augmented.

A large spicula of bone found in the dura mater, over the top of the left asc. parietal convolutions.

Pia is not cloudy, nor adherent; it floats on a clear liquid all over the brain.

The brain is fairly well developed, symmetrical, presenting nothing abnormal. The base presents the following: The olfactory nerves are completely atrophied; anterior pair of the corp. quadrigemina very small; a soft, large brownish body, pea like in size, between the left corp. quadrigemina, crus. and pons, it lies superficially to the brain and seems to be connected with the choroid plexus.

Ventricular fluid increased.

Internal carotids athermatous to their very ending in the circus Willisis.

Cerebellum somewhat softened, entire.

All other parts of the central nervous system normal.

Case 20 (*No.* ——.) — *Dementia, Senilis.*

History.— Admitted May, 1895. Duration of mental derangement — case six months.

Causes.— Age, intemperance.

Age, 73; married; quarry-laborer.

Onset gradual; became feeble and filthy, and at times violent and threatening; destructive; excitable and again depressed.

After admission.— Memory poor; weak physically; dry cough. Temperature elevated. June. Pleasant, weak; temperature rises and continues higher. Gradual exhaustion; death June 21st, 1:50 p. m.

Autopsy June 22d, 10 a. m.

General examination.— Body emaciated; abdomen sunken in its upper part, flatulent below. Decubitus over the hips.

Section.— Scalp very thin. Skull thickened to almost twice its normal, very heavy. Dura adheres all over; some sand in the adhesions.

Dura adhered to pia over both sup. parietal convolutions near the median line.

Pia cloudy all over the middle three-fifths of the brain surface,

especially over the asc. parietal, sup. parietal and first occ. convolutions; no adhesions with the brain.

Meningeal fluids augmented.

Brain somewhat darker than normal, very frail. No special pathological condition found in the remaining nervous centers.

Thoracic organs.— Heart feeble; two semiorganized, not very large clots in the ventricles; valves normal.

Lungs normal, lower lobes congested; left bound by old pleuritic adhesions.

Abdominal organs.— All normal, except the following : On the small intestine, about twenty inches from its junction with the coecum, there is a downwards projecting pouch. It is in direct communication with the intestine, its mouth is but little constricted, and it has the same general aspect and structure as the parts with which communicates. It is four and a half inches long, filled with gas, smooth and free from adhesions.

The vermiform appendix is very thin and eight inches long.