Dr. Murray will soon have completed a long, efficient and most honorable term of service for his country. It is thought that Surgeon J. H. Baxter, who stands next on the roll, will be the worthy successor.

INTERNATIONAL MEDICAL CONGRESS INTERESTS ABROAD.—In Vienna, Austria, a local committee of twenty-five members has been formed for facilitating arrangements for attending the Ninth International Medical Congress in Washington, 1887.

It is stated in one of our exchanges that Professor James F. Harrison has resigned the chair of Practice of Medicine and Obstetrics in the University of Virginia, which he had held for several years past.

SOCIETY PROCEEDINGS.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, March 25th, 1886.

THE PRESIDENT, J. C. WILSON, M.D., IN THE CHAIR.

W. E. HUGHES, M.D., RECORDER.

Dr. H. F. FORMAD read a paper on

INTRACRANIAL HÆMORRHAGE; RECORD AND CLASSIFICATION OF 143 CONSECUTIVE FATAL CASES OBSERVED IN MEDICO-LEGAL PRACTICE AND IN PRIVATE AUTOPSIES IN PHILADELPHIA.

There existed, he said, no well defined descriptions of the various forms of intra-cranial hæmorrhage with reference to their etiology, and no classification that could be of any service in medico-legal examinations, and Dr. F. suggested the classification and observations presented below as particularly adaptable for the latter purpose. These records may also be of some use to the surgeon who wishes to trephine. The observations were sufficiently numerous to warrant conclusions of importance for various ends. He regretted that he met his cases on the autopsy table only, and hence was unable to offer clinical details. In some cases the history was far from being reliable, and in a few the history was left to conjecture from surroundings, the circumstances of the case, and the appearance and general lesions of the body. He wished to give credit to his colleague in coroner's work, Dr. R. R. Stewart, whose assistance in these observations he enjoyed, and also to his assistants, Drs. A. J. Plummer and George H. Chambers. Dr. Formad's cases of intra-cranial hæmorrhage embrace the results of various kinds of head injuries (traumatic), and cerebral apoplexies (idiopathic hæmorrhages) as well. By the term cerebral apoplexy he meant exclusively hæmorrhage in the brain, and did not refer to congestive, serous, embolic, or nervous apoplexies, and other affections which tyrannic nomenclature has thrown together under the name of apoplexy.

Idiopathic cerebral apoplexy should also be strictly separated from traumatic (this is *not* done by many writers). The latter can be further subdivided into very well defined sub-varieties of hæmorrhages, each etiologically distinct, as will be shown below. These observations will clearly show the necessity and usefulness of a classification such as suggested. There should never be any reasonable doubt at the post-mortem table as to whether a cerebral hæmorrhage was due to disease or to injury, or to both combined; nor as to whether a head injury preceded or followed an intra-cranial hæmorrhage. Dr. F. believed that the diagnosis between the conditions stated was much more difficult during life. He had seen errors made by foremost surgeons and physicians in the best hospitals in Philadelphia. Dr. Formad had seen cases of apoplexy diagnosed as fracture, and trephined, and he had seen cases of fracture of skull unrecognized and untouched, left to die in the medical wards.

Upon the post-mortem table, however, there should be no difficulty in diagnosing such lesions at the present status of morbid anatomy as a distinct and well-defined science. After sufficient accurate observations have been made and after seeing conditions to repeat themselves, case after case alike, and having in the majority of instances cause and effect directly before the eyes, one should be able, in disputed cases, to make a post-mortem diagnosis which leaves but little room for doubt.

Dr. Formad divided the cases of intra-cranial hæmorrhage observed by himself into the following eight different classes.

Class I; 12 Cases. Post-mortem Appearance.—One or more small hæmorrhages in the fasciculi teres of the fourth ventricle; also, ecchymoses in the lining of the other ventricles (no massive hæmorrhage anywhere) cerebral substance as well as membranes intensely congested. Cranium much congested; drops of blood oozing from cut surface and from periosteum. Marks of contusion in scalp, with more or less ecchymoses, noted in all cases.

Histories.—In two cases death was caused by electricity (details will be recorded elsewhere). Ten cases revealed concussion of brain from injuries to head, without fracture of skull. Death was rapid or sudden from shock in all these cases. Six were males and six females; the majority were young persons.

Class II; 23 Cases. Post-mortem Appearance.—Massive hæmorrhage (blood-clot) of various sizes found between pia and dura-mater, location in the majority of cases about opposite to place of application of violence. In none of these cases was the meningeal blood-clot located immediately beneath the point of application of violence. Ventricular ecchymoses also found usually. Brain anæmic in proportion to quantity of hæmorrhage. Scalp injury well marked in some, in others less so, while in a few cases it was hardly noticeable.

Histories.—Concussion from injuries to head without fracture in twenty-one cases; with fracture of skull in two cases. Death rapid (all within one hour) or sudden either from shock or from compression of

brain, the result of pressure from clot, or from both. Fourteen males, nine females; ages varied.

Class III; 45 Cases. Post-mortem Appearance.—Massive hæmorrhage (blood-clot) usually quite large, located between dura-mater and inner surface of fractured skull, and at the site of application of violence only. Brain anæmic.

Histories in all these cases revealed injuries to skull from accidents, blows or other violence, resulting in fracture of skull. Death on the average ensued slowly from compression or anæmia of brain in the lapse of from several hours to several days (in a few cases five to eight days). Thirty-eight males and seven females; majority young and middle-aged persons.

Class IV; 12 Cases. Post-mortem Appearance.—Massive hæmorrhage, the same as in the preceding class, but occurring both at site of application of violence and also at some point on opposite side of skull. The first, a large clot between dura-mater and scalp, while the latter in the arachnoid (between dura and pia-mater), and usually small. At the site of injury there was found a fracture of the skull in all these cases, so that they presented the combined features of Classes II and III.

Histories in these twelve cases observed, showed injury to skull resulting into both fracture and concussion. Death was nearly instantaneous in all these cases. Nine were males and three females, mostly young and middle-aged persons.

Class V; 9 Cases. Post-mortem Appearance.—Punctiform and multiple hæmorrhages into the tissue of the dura-mater, which showed much thickening and adhesions to inner surface of skull from chronic hæmorrhagic pachymeningitis; great œdema of the pia-mater. Brain congested, but no blood-clots within cerebral substance.

Histories in these cases revealed former attacks of sunstroke or old injuries of head. Death usually sudden and usually following a fall or severe intoxication and excitement. Ages of deceased, between 20 and 50 years; all males.

Class VI; 34 Cases.—Massive hæmorrhages of various sizes into the brain-substance proper and thence into one or both of the lateral ventricles. Hæmorrhagic softening of brain-substance of corpora striata or their vicinity. No meningeal hæmorrhage in any of these cases, though in some blood was observed to have leaked out from the inner ventricles through the transverse fissure and fourth ventricle, and some usually liquid (post-mortem) blood would be seen in the cerebral fissures upon periphery in the meshes of the pia-mater and arachnoid. Brain-substance in nearly all cases quite anæmic. Atheroma of cerebral vessels in all but three cases. Multiple small aneurisms of cerebral vessels noted in several cases. Chronic pachymeningitis in various degrees in all but five cases. In some cases there were scalp injuries from secondary falls, *i.e.*, falls that were the result of preceding cerebral hæmorrhage. Many of these cases came under coroner's jurisdiction on account of suspicion of violence.

Histories, wherever obtainable, revealed either alcoholism, rheumatism, or syphilis; middle or advanced

age. Twenty-six males, eight females. Death in the majority of cases ensued slowly. These are true cases of idiopathis cerebral apoplexy.

Class VII; 6 Cases. Post-mortem Appearance.—Massive hæmorrhage of various size, below pia-mater, into brain-substance, without breaking into lateral ventricles. In one case the blood-clot involved the substance of the pons and protruded into fourth ventricle; in two cases it occupied the substances of the right parietal lobe, which was the seat of an abscess; in three cases the hæmorrhage was multiple, in small foci, with localized hæmorrhagic softening of periphery of brain-substance in various places. In three cases there was atheroma and in the other three fatty erosions of the cerebral vessels. Chronic pachymeningitis in all cases. Brain-substances congested.

Histories were those of former head injuries, alcoholism and probable syphilis. Death rapid, following intoxication, or exertion. Age advanced in all cases. Five men, one woman. Foul play had been suspected in all these cases.

Class VIII; 2 Cases. Post-mortem Appearance.—Massive meningeal hæmorrhage below pia mater, combined with hæmorrhage into ventricles; no visible hæmorrhage into brain-substance. Atheroma and multiple; small aneurisms of vessels of pia and of choroid plexus. Echymoses in scalp.

Histories of accidental falls. No previous symptoms of cerebral disease had been noted. Intemperate habits; injury of the head leading to rupture of the diseased vessels evidently had preceded the cerebral hæmorrhage. The persons were at work (washing) at the time, when nearly simultaneous with the fall death ensued. Both were women; ages 57 and 63 years.

A number of cases of intra-cranial hæmorrhage observed by Dr. Formad he had excluded from the series above detailed. Several cases of compound comminuted fracture in which the skull, membranes and brain were partly pulped into a mass and hence the hæmorrhage not being satisfactorily made out; were excluded from the above records. He also excluded chronic cases of cerebral hæmorrhage, and those resulting in abscesses or a fatal lepto-meningitis or cerebritis, after the patients had partly recovered from the immediate effects of the hæmorrhage. Dr. Formad did not incorporate into these records another large class of intra-cranial hæmorrhage, *viz.*: that of infantile meningeal hæmorrhage. Of these he had seen many in coroner's work. Meningeal hæmorrhage is common in infanticides and foeticides; and even in still-born children. Dr. Formad could not plausibly explain the frequency of meningeal hæmorrhage observed in still-born, otherwise than presuming that they were due to traumatic injuries from violence or to compression of the cranium during protracted labor, or when forceps had been injudiciously applied. He did not meet with cerebral hæmorrhage in children other than meningeal.

Returning to his classification, Dr. Formad stated that the quantity of the hæmorrhage or the size of the clot in any case of intra-cranial hæmorrhage appeared, in all the cases he observed, to depend upon the duration or the time that elapsed from the mo-

ment of injury to death. In cases where death ensued rapidly or instantaneously from shock, like in many fatal cases of concussion, or even in fractures of skull followed by immediate death, like in falls from a great height, the bulk of the ante-mortem hæmorrhage (the blood-clot) was remarkably small; or clots were occasionally entirely absent, and only a post-mortem oozing of liquid blood could be observed. When death is protracted for several hours, then the blood-clot was usually large, weighing up to six or eight ounces, and causing death by compression of the brain. In some cases of fracture of the skull the hæmorrhage is probably delayed for several hours, or ensues but very gradually. Some patients are said to have walked around for many hours after the injury, and subsequently, when the blood oozed out in sufficient quantity to compress the brain, they fell, became unconscious, and died in coma. In one case of this nature he had found a meningeal clot weighing eight ounces.

Dr. Formad observed that in the cases in which the intra-cranial hæmorrhage was voluminous and death instantaneous there was very little scalp ecchymoses; whereas scalp hæmorrhage was more pronounced if the intra-cranial hæmorrhage was small and death delayed.

Further, Dr. Formad noticed that in no case where there was internal cerebral hæmorrhage, was there any meningeal hæmorrhage when cerebral vessels were normal; and in no case of traumatic meningeal hæmorrhage did he see any coincident ventricular hæmorrhage (except small ecchymoses), unless there existed some old lesion of the vessels or substance of the brain. It appears, however, that blood from the lateral ventricles may leak through the foramen of Monroe into the third ventricle and thence by the aqueduct of Sylvius find its way into the fourth ventricle, but Dr. Formad did not see in any one of the cases he observed that a primary hæmorrhage into the fourth ventricle ever extended to the lateral ventricles, probably on account of its rapidly fatal character. A hæmorrhage on the outside of an uninjured pia-mater cannot reach the interior of the brain or the lateral ventricles.

The source of the hæmorrhage is often very difficult to determine. In fracture of the skull, the hæmorrhage is often diploic; in concussion of the brain the hæmorrhage has for its source the vessels of the pia-mater: in diseased conditions of the brain or in atheroma of vessels the small feeding branches of the middle cerebral and of the basilar artery bleed most frequently, and the blood breaking into lateral ventricles forms clots in either one or both of the ventricles.

The views expressed by Dr. J. A. Lidell in his large "Treatise on Apoplexy" (New York, 1873, p. 133), that "meningeal hæmorrhage not unfrequently occurs spontaneously, as well as in consequence of the operation of violent causes," and that (see page 120) "meningeal hæmorrhage of spontaneous origin is not a rare affection," is unquestionably erroneous. Yet such "views" are quoted by writers on forensic medicine and presented to juries in murder trials as facts. Ignorant post-mortem examiners can set

murderers free, or on the other hand create unnecessary court-trials.

Dr. Formad's conclusions were:

1. Hæmorrhages exclusively above the pia-mater and above the dura-mater, *i. e.*, on the outside of the brain, are always due to *traumatism* or to *sunstroke*, provided a cerebral source for hæmorrhage is excluded and the cerebral vessels and membranes are not diseased.

2. Hæmorrhage in the floor of the fourth ventricle is always traumatic, provided there are no blood-clots in the lateral ventricles or any other part of the cerebral substance.

3. Hæmorrhage exclusively below the pia-mater, or in any part of the brain-substance or in the ventricles (except the fourth), is always idiopathic, *i. e.*, is due to disease.

4. A diseased condition of the cerebral vessels or substance is necessary in order to ascribe a hæmorrhage to disease; there must be *traumatism* (some form of violence or falls) in order to induce a hæmorrhage in a normal brain.

5. The blood-clot in concussion of the brain is not found at the point of application of violence, but always somewhere about the opposite side of the brain, and always within the arachnoid, *i. e.*, between pia and dura-mater.

6. The blood-clot in fracture of skull is always found at the point of application of violence immediately below and always between the dura-mater and the fractured part of the skull itself.

7. A blood-clot formed within the cranial vault is more favorable to the patient if due to fractured skull than if due to a mere concussion.

8. Only clotted blood and infiltration of blood corpuscles into tissues indicates an ante-mortem hæmorrhage; liquid blood is due to post mortem oozing, and only stains, but does not infiltrate tissues.

9. Severe bruises and cuts of the scalp may be seen in cases of idiopathic apoplexy where a sudden cerebral hæmorrhage causes a person to fall.

10. In some cases it is impossible to decide by medical examination alone as to whether a head injury and the result is due to a fall or to violence.

11. External marks of violence may be invisible to the unaided eye in some cases of injury of the head or other parts, but are easily detected and also distinguished from post-mortem spots by means of the microscope.

12. The bulk of an intra-cranial hæmorrhage stands usually in inverse ratio to that of the external hæmorrhage into scalp.

DR. T. D. DUNN presented an unusual case of

CORTICAL HÆMORRHAGE WITH RHYTHMICAL CONTRACTIONS OF THE LEFT SIDE OF THE BODY.

A widow, æt. 73 years, came under his care June 23, 1886, with symptoms of congestive apoplexy. In a few days she recovered sufficiently to be able to leave her room. With the exception of some mental impairment for several months before the attack her health had been good. There was a second attack during the night. When Dr. D. saw her there were regularly recurring movements of the left side of the

body. Sensation and consciousness were not affected. The right side of the body could be moved at will, but articulation was impossible. The contents of bowels and bladder were discharged involuntarily. The movements continued during sleep. The movements gradually diminished, being lost in the leg on the fourth day and in the arm on the fifth. She died six days after the attack. At the autopsy a clot as large as a hen's egg was found situated on the right side of the brain, very superficially, extending from the ascending parietal convolution to the occipitoparietal fissure, and from the convolution of the longitudinal fissure to the temporo-sphenoidal lobe. The convolutions pressed upon and partially destroyed were the ascending parietal, the convolution of the longitudinal fissure, the supra-marginal, and the angular gyri.

DR. F. A. PACKARD presented a patient having a
CONGENITAL ANOMALY OF BOTH HANDS.

The right hand consists of a thumb, an index and a little finger, with only two metacarpal bones. The thumb has two phalanges and articulates with the same metacarpal bone as the index finger. The power of flexion is absent. The index finger has three phalanges. It can be flexed as a whole, but the individual phalanges are fixed. The little finger has three phalanges. The left hand consists of a thumb, index, ring, and little fingers, with four corresponding metacarpal bones. The patient is one of five children. His mother and father are normally formed; one sister has one hand that resembles his left; another has a left hand similar to his, and on the right hand has the middle and index fingers united throughout their entire length; one brother has both hands similar to this man's left. The only member of his generation not deformed is his twin brother. He has several children, all normally formed, and so, too, with his nephews and nieces.

DR. J. M. BARTON presented a

TUMOR OF THE STOMACH,

removed from the body of a man æt. 47 years. His digestion became impaired two years ago, and soon afterward he noticed the tumor. The symptoms were mainly those of chronic gastritis, with at one time a profuse hæmorrhage. The tumor was hard and well defined, and occupied the epigastric region. At the autopsy the tumor was found occupying the upper portion of the pyloric outlet of the stomach; did not encroach enough on the outlet to prevent the passage of a finger. It was found, on microscopic examination, to be a scirrhus carcinoma.

CHICAGO MEDICAL SOCIETY.

OFFICIAL REPORT.

Stated Meeting, June 21, 1886.

THE PRESIDENT, E. J. DOERING, M.D.,
IN THE CHAIR.

DR. FRANK E. WAXHAM read a paper entitled

INTUBATION OF THE LARYNX AS A SUBSTITUTE FOR TRACHEOTOMY, WITH A REPORT OF 83 CASES.

The author referred to the various modifications that had been made in the instruments within the past year. First, the enlargement of the heads of the tubes to prevent slipping into the trachea; second, the addition of a shoulder to prevent their expulsion; and third, a very important modification consisting of the construction of the tubes with thinner walls, giving greater breathing space and a better opportunity for the expulsion of false membrane. The author also presented a feeding bottle useful in those cases where they entirely refuse to take nourishment, as they will do occasionally, and also a trachea forceps for the purpose of removing false membrane by way of the mouth when there is detachment below the tube, or when it is pushed down ahead of the tube and cannot be expelled.

The author thought that the first question that would arise, in considering whether we had a substitute for tracheotomy in tubage of the larynx, would be as to the comparative success of the two methods. By personal inquiry and by correspondence he had collected reports of 306 cases of tracheotomy performed in Chicago with 58 recoveries, or a percentage of 18.95. The average in 138 cases was 5 years and 1 month.

In contrast to these statistics the author reported 83 cases of intubation with 23 recoveries, or a percentage of 27.71. The ages were as follows:

No. of Cases,	Age,	Recoveries,
1.....	9 months.....	0
1.....	11 months.....	0
1.....	13 months.....	0
3.....	14 months.....	1
1.....	15 months.....	0
1.....	16 months.....	0
1.....	17 months.....	0
1.....	18 months.....	1
1.....	20 months.....	1
7.....	2 years.....	2
2.....	2 years and 1 month.....	1
2.....	2 years and 2 months.....	1
2.....	2 years and 3 months.....	0
3.....	2 years and 6 months.....	1
1.....	2 years and 9 months.....	0
12.....	3 years.....	2
1.....	3 years and 4 months.....	1
1.....	3 years and 6 months.....	0
11.....	4 years.....	5
1.....	4 years and 9 months.....	1
3.....	4½ years.....	0
9.....	5 years.....	4
6.....	7 years.....	1
1.....	7½ years.....	0
2.....	8 years.....	1
1.....	11 years.....	0
7.....		0
83		23

Average age, 3 years and 7 months.

It will be observed that 11 cases with 3 recoveries were under 2 years of age; 28 with 8 recoveries under 3 years; 14 cases with 3 recoveries between 3 and 4 years; 15 cases with 6 recoveries between 4 and 5 years; 9 cases with 4 recoveries between 5 and 6 years, and 10 cases with 2 recoveries between 7 and 11 years.

Many of these cases were young nursing infants,