25th of the same month. The kick on his right side left a mark an inch in diameter on the upper edge of the ilium and an inch above. That mark and surroundings became black and blue, and remained so to his death. After getting away from the man, he laid down under or beside a fence, in great pain for a quarter of an hour, and then went home, an eighth of a mile.

He was restless that night, and had profuse diarrhea the next morning, with a distressing bearing down at the time of the operations. [This diarrhea continued, more or less, during his life.] He attended church the next morning; and went to school most of the time. He also played hoop, ball, jumped from fences, wheeled a wheelbarrow with fifty pounds of bone in it, and ran and played in various ways with other boys. He complained but little of pain in his side, but laid around the stove and in the sun often; he acted somewhat dumpy a part of the time, looked pale, ate little, and would take no warm drinks as he used to do, but wanted cold water.

On the 25th of June, at ten o'clock in the morning, he had trembling and distress; in a few hours he had vomiting and spasms, which continued from time to time until he died, about twelve o'clock the following night.

The physicians who made the post-mortem examination, next day, said there was discoloration of the surface of chest, abdomen and side to a considerable extent; also, that there was a rupture of the gall-bladder and effusion of bile into the cavity of the abdomen; considerable peritonitis; inflammation and softening of the mucous membrane of the stomach.

The man who inflicted the injury was tried for manslaughter, and the jury disagreed. Three were for manslaughter, and nine for assault.

Did the kick kill the boy? Did it rupture the gall-bladder?

No physician attended him during his sickness.

HORNY TUMOR OF THE EAR.

By J. P. Whittemore, M.D., Haverhill, Mass.

I noticed in a former number of your Journal an account of a horn growing upon the eyelid, and the reading of it brought to recollection a circumstance of similar nature which occurred to a townswoman and patient of mine, some fifteen or twenty years since, while practising in the town of Chester, N. S. It was this. Mr. B. was a contrac-
of it. A watery tumor, globular in form, with a well defined short neck about one inch in diameter, and in size equal to a green walnut inclusive of hull, was found upon the lower lumbar and sacral region. Rudimentary processes were distinctly felt lining each side of the cleft, the lateral arches being only partially developed. I informed the midwife of the nature of this malformation, advised caution in communicating with the parents, and applied a roller sufficiently tight over the tumor to insure moderate pressure and safety from external injury. The color of the coverings was that of the surrounding skin; the child was otherwise well formed, without undue development of head; there was no paralysis of the lower extremities; bladder and bowels acted normally, and the infant took the breast well and at suitable intervals. I saw it again on July 22d; noticed no change save a slight enlargement of the sac, whose envelope was then of a redder tint, and traces of fine blood vessels more perceptible. While the appetite and natural discharges were regular, I was told that the child was never fully awake, but lay in a semi-comatose condition. The parents doing well, I informed them of the consequences of this affection upon their child. Being themselves poor, and their offspring likely to inherit a similar future, the question of restoration to corporeal independence outweighed the possible loss of their child, and I was requested to do what I thought proper in my endeavor to remedy the malformation.

I will here state that the father is 50 years old, of good muscular strength and build. His wife, a primipara, is 28 years old, and a fair type of feminine masculinity, such as laboring classes usually exhibit; and their respective families are to their knowledge without symptoms of tuberculosis, nor have similar abnormalities been known.

The operation was performed on July 28th. The dimensions of the sac, now of double its original size, were as follows:

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circumference around neck</td>
<td>34 inches</td>
</tr>
<tr>
<td>of cyst along median line</td>
<td>7½</td>
</tr>
<tr>
<td>at right angles</td>
<td>6½</td>
</tr>
<tr>
<td>Depth from summit to level of spine</td>
<td>24</td>
</tr>
</tbody>
</table>

The covering was of a pale pink color, and its blood vessels well marked. The instruments, &c., used, were:-Brabilla's trocar (for dropy of the eye), combined with the exploring needle; bistoury; probe; a meningophylyx, with convex, but narrow and oblong compressor (see Blasius's akur-

gische Abbild. Taf. XXI. Fig. 7); needles; adhesive plaster; white wax, and collodion with brush.

Puncturing the sac with the trocar, a sufficient quantity of clear serum* was slowly allowed to escape to collapse the cyst around the cleft for a more careful examination. A small piece of wax was next moulded around the compressor to fit the outlines of the opening, especially at its upper portion, and extravasating with gentle pressure (aided by the blunt probes to reopen from time to time the puncture) as much of the liquid as dilated the sac over and around the cleft, I applied the compressor slightly warmed (to mould the wax still further to the shape of the cavity, and to insinuate itself around the rudimentary lateral arches, which limited each side in shape of small cones) firmly upon it, and gave it in charge of an extemporaneous assistant, whom I had previously instructed. Being satisfied that the compressor controlled fully the communication with the interior spine, I made with the bistoury an incision at a depending point of the sac, thus giving exit to the remaining serum mixed with a little blood from the covering, and formed by a horizontal cut of the envelope two flaps, the upper one sufficiently long and much below the compressor, so as not to interfere with it, and the lower one short to meet it. Two stitches were taken, and four narrow adhesive strips laid across the incision and as near as possible to the compressor, which had not been removed nor relaxed. A firm coat of collodion was then added to close the interstices, and a compress retained by a many-tailed bandage around the body of the child. No further exudation of fluid occurred. The child was quiet throughout the operation, which lasted twenty minutes, and it gave evident signs of appetite, which were gratified at its completion; it took the breast readily. I directed to re-apply collodion wherever it seemed about to peel off.

Aug. 1.—Improving; bowels and bladder act regularly; appetite good; instead of the former comatose condition, the child now has its alternate spells of waking, sleeping, eating, and crying.

Aug. 9.—Removed adhesive plaster and cut one remaining stitch; adhesion perfect and firm. Covered the whole cicatrix with collodion, and re-applied the many-tailed bandage with a compress, a piece of soft

* The quantity of liquid collected amounted to four onces and three drachms; it was limpid, saline, and not albuminous.
The Boston Medical and Surgical Journal as published by

leather one-eighth inch thick, properly secured in a cushion. The child is gaining flesh; motory power over lower extremities unimpaired; measurement of the head, before and since operating, gives as yet no increase in size.

Aug. 29.—The child is doing well; has gained up to this time two pounds in flesh; head unchanged; cicatrix contracting; reapplied a firm coat of collodion and former compress with bandage.

Sept. 17.—The child uninterruptedly improving in strength; weighed to-day fourteen pounds, a gain of four and a half pounds since the operation; motory power perfect, and the appearance differs in nothing from that of other healthy children.

Certain peculiarities of fetal life seem to favor the production of congenital hydrocephalus:

1. The spinal column is proportionately larger in the infant than in the adult; it is symmetric with the head; the primary formative process is more active and centric, and the laws of genesis, because here the most necessary and specifically most required, seem to apply as well to the spine as to the skull.

2. The spinal column is perpendicular to the horizontal diameter of the atlas, and descends uniformly in a straight line; the pressure of the cerebro-spinal fluid and its superstrata is therefore direct and uninterrupted by the friction of subsequent curves. This becomes of greater importance, because:

3. The pyramidal figure of the spinal column is reversed in the fetus, its apex lying in the lumbar vertebrae. The amount of pressure from the fluid exerted at the apex is represented by the weight of the fluid minus the friction along the walls. Add to this, that the development of the lumbar vertebrae commences usually by five cartilaginous centres, which even at birth are separately movable, and we should, a priori, look for a greater frequency of spina bifida in that locality.

The undulatory movement of the fontanelles in an infant is based upon a two-fold cause, an arterial and a respiratory; the former causing the elevation of the covering during or immediately after the systole and a depression in the diastole. Ecker, Burbach, Magendie, and others, found the same ebulling and flowing to exist in the spinal column; and that other observers, Haller and Flourens, have failed to discover it, is probably owing to the selection of animals for experimental purposes which really do not possess this quality (domesticated rabbits). The lungs, however, have a more decided motory power over the brain. As each expiration raises the brain, the cerebro-spinal fluid is propelled upward, and it recedes at the inspiration; the former favoring the propulsion of the arterial blood and retarding the collapse of the venous trunks, while the latter has an opposite result. Ecker has shown that the ultimate removal of the cerebro-spinal fluid conditions a corresponding diminution of the respiratory evolutions of the brain, which is only restored to its former magnitude by closing the wound and allowing the fluid to be reproduced. The venous sinus of the spinal column is, however, capable of greater distention than the vessels of the brain, and a certain volume of fluid finds its way by displacement through the lower portion of the fourth ventricle, cerebro-spinal opening, fourth ventricle proper, aqueduct of Sylvius, third ventricle and foramina of Monro, into the lateral ventricles on each side, by which the overlying brain is elevated.

In the normal relation of the cerebro-spinal fluid with the brain and spinal cord, it secures the surrounding surfaces against friction with neighboring resistive structures, fills the open spaces, and gives way to the various displacements of the contents. The fluid may be said to support the accumulation of venous blood in congestion, inspiration, &c., and is itself supported by the venous blood of the interior vertebral canal. In the reciprocity of this pressure may, perhaps, by future investigations, be found the cause of certain obscure diseases, tetanus, chorea, &c., of which I may speak in a future article.

In the abnormality of a greatly increased volume of fluid in the encephalon, these movements are considerably lessened, of which fact the full and distended fontanelles are the evidence, especially in congenital and internal hydrocephalus, and one of the most important causes of this disease is to be found in the occlusion of the passage of fluid by a membranous gate across the sylvian aqueduct; not because the fluid could, co ipso facto, not be as readily absorbed, but because by a want of retrogressive pressure through this passage to the continuous spinal cord, the restorative activity of the brain is paralyzed and repair impossible. In hydrocephalus, it may be presumed that the movements of the brain are only diminished in a direct proportion with the volume of fluid. Ecker found the spinal undulation undiminished after total removal of its fluid, and supposed that the expansive
capacity of the spinal venous sinus must be powerful enough in itself to raise the spinal cord.

The faculty, therefore, of displacing an accumulation of the cerebro-spinal fluid by pressure, as we witness it in spina bifida, is not one peculiar to this affection per se; no further morbid condition of the cord and its continuity with the encephalon is necessary for its existence. It constitutes another proof for such a communication. In like manner does the removal of the fluid by puncture diminish or annihilate the support to the bloodvessels, and a failure of counterbalance to any hyperemic status is the consequence.*

The comatose condition of the infant with spina bifida is the direct result of pressure.* The experiments of F. Magendie (loc. cit.) have shown that water of 30°-31° C. (96.8°-98.6° F.) injected through the dura mater produces similar phenomena, sometimes united with irregular muscular action. The volume of pressure also exerts its influence in morbid conditions. Hydrocephalus is usually present when the spinal deficiency is located in the cervical region, less frequently pari passu with a lower position. The same analogy by which, according to Morgagni (de sedibus et causis Morborum), the absence of a cervical vertebra predisposes to apoplexy is applicable here, for the greater approximation of the heart's impulse to the brain increases also the exponent of pressure of an augmented fluid.

Any sudden impression on the nervous system, not only by disturbances in its characteristics as vital agents, but also by the more mechanical action of a reduced compression (as in the abstracted cerebro-spinal fluid) leads to a constant increase of local sanguine force, and we meet it in the sudden death in childhood from hasty alteration of posture after spasmodic disorders (or disorders of spasmodic tendency), owing to an impaired respiratory process. As adjunct causes, we notice that in infancy the bloodvessels of the brain and spinal column are more liable to give way under pressure without being ruptured, and that, consequently, by the greater fluctuation of the unossified skull the relative quantity of blood can be permanently much increased without giving rise to extravasation. Advanced life gives apoplectic seizures where in childhood we find spasm and hydrocepha-ulus, for the exponents of which we look to the impaction of the nerve centres, cushioned upon the accumulating blood in its full and fluctuating vessels to the production of a hypostatic hyperemia, under which the animal economy is obliged to succumb. Again, the elimination of the separating medium, the cerebro-spinal fluid, induces nevertheless a congestion of the cerebral veins; certain parts of the brain, &c., approximate each other so that, especially, the pneumogastric nerve is so compressed as to result in pulmonary paralysis or violent epileptic spasm with fatal laryngismus stridulus.*

Passing now to the treatment of spina bifida. We find not only a variety of procedures, but also a seeming indiscrimination as to the best mode to be adopted in certain cases. Some writers favor the Bag- livian axiom of "scire multa agere pauca," and advise a course of treatment well suited in a case, an infant of "we could or otherwise would do people." "To interfere as little as possible with the tumor; if any local medication only a simple disinfectant lotion, or a defensive and discurient plaster with gentle pressure; abdominal secretions and excretions promoted; a healthy wet nurse under the treatment of a course of iodine (see Cope- land's Med. Dictionary), was perhaps effectu- ally carried out in the case given by Dr. Wm. Pepper (Amer. Jour. Med. Science, July, 1867, p. 137), who saw the result of one of the most favorable instances, none of the fibres of the spinal cord entering the sac, not interfered with. The existence, however, of spina bifida in after years, is an exception to the rule, and should not govern the practice and decision of the surgeon. Repeated puncture of the cyst, with gradual extravasation of the contents, was first practised by Ruyssch† and afterward by Abernethy.‡ Abercrombie added gradual pressure, which was more fully carried out by Sir A. Cooper.§

The objections against repeated puncture, with or without systematic pressure, may be summed up as follows:—

1. All cystic collections have a common


† Duges reports a case of spina bifida in Revue Medi- cale, April, 1823, in which lie maintains that such a tu- mor was ruptured in utero, and closed again ante natal. This is possible under the supposition that the encase- ment of the fetus within the membranes and the pressure of the liquor amni are sufficient to support the cerebro-spinal fluid and counteralual its gravitation. The subsequent vertex position of the fetus may also aid in effecting this result. In the case here reported, the intra-uterine motions were strong, as common with most children. The coma supervening after birth may be due to the removal of these causes.


§ Surrg. and Physiol. Essays, part I., 1. 75.

tendency to reproduce an altered fluid of
greater drainage and destruction to the
system. The non-albuminous contents be-
come albuminous, particles of pus and 4-
bris of lymph are seen floating about.
The few cases on record belonging here, teach,
that after a primary diminution of the sac,
the irritation was transplanted to the brain
(convulsions, hydrocephalus), and after
death a creamy pus occupied the cyst in
communication with the theca vertebralis;
lymph was found adhering to the arachnoid
lining, with general appearances of acute
inflammation, &c.

2. The most unfavorable grade of spina
bifida, "ulcerated coverings, giving way
under the inflammation of the membranes
of the cord with the symptoms of spinal
meningitis," is invited by repeated perfo-
ration. (See Copeland, p. 742.) At each
extravasation of the fluid, we induce a hy-
peremia of the superior bloodvessels and
more or less friction between parts before
separated.

These objections are of greater import if
the perforation is associated with the injec-
tion of iodine, as practised by Velpeau and
Brainard. In injecting the cyst we really
bring an irritant fluid in direct contact
with the nerve centres, and if, to obviate
the injurious effects of such a contact, we
ligate the base of the sac, we must first
determine the probable consequences of

1. The absorption of the injected fluid;

2. The inflammation of the constricted
membranes and its approach to the internal
arachnoid; and,

3. Should all happen well, where is the
guarantee that we may expect a removal
of the strangulated cyst with perfect adhe-
sion, rather than the third variety of spina
bifida, according to Billard ('Traité des
Malad. des Enfans, &c.),' "the skin open-
ning, allowing the effused fluid to escape
through an ulcerated perforation," and of
which he says that death follows speedily
(Copeland, loc. cit., p. 741.)

Dr. Samuel D. Gross tried the proceed-
ing of B. Bell, tying the base of the sac so
as to cut off the further propulsion of
the fluid, but unsuccessfully. Dubois uses a
steel clamp to compress the cyst and bring
about adhesive inflammation. The actual
cautery has even been proposed. The pro-
ceeding of Dubourg* comprises the removal
of a part of the sac at its base so as to form
two flaps, the finger of an assistant prevent-
ing the escape of the spinal fluid and the
entrance of air. The wound is closed with
bare-lip pins and the twisted suture. Re-
commended by him only when the swelling
is moderate and the child's head other-
wise good. Beynard* surrounds the base
of the tumor with a spring into which a
ligature is introduced and ties it up. By a
gradual constriction of the ligature, the
inner walls of the sac are brought into con-
tact, and after effected union he cuts off
the exterior and brings the supporting
edges together with adhesive plaster. Some-
times he punctures the cyst, should the
swelling be very tense. Cheilius prefers
the mode of Beynard to that of Dubourg.
Most† speaks of electro-puncture, by which
he thinks to obtain adhesive inflammation.

The objects which I had in view in oper-
ating for spina bifida, as indicated, were:

1. The selection of favorable cases: non-
complication with hydrocephalus, other de-
formities or multilocular and open cysts.
Absence of symptoms that the brain is seri-
ously implicated.

2. Gradual and careful extravasation of
the contents without suction upon the spi-
nal canal and descent of its fluid.


4. Perfect closure of the wound without
the use of irritating means, so that all
causes leading to local or continuous in-
flammatory action may be avoided, and
healing by first intention promoted.

5. Subsequent systematic support of the
cicatrix until the defective spine is supplied
with a firm covering, relying upon the ef-
forts of nature to supply the place of an os-
sceous with a cartilaginous formation, as we
see it after trephining the skull.

I adopted the perfect occlusion of the
spinal opening by means of a suitably-shaped
instrument, as fulfilling the second and
third proposition. I found, in my collec-
tion, the meningophylax of the most pro-
mising shape. To obviate the possible es-
cape of the fluid, because of the irregularity
of the cavity, I added white wax to the
compressor and softened it before its appli-
cation, to insure its cast-like entrance.
Perhaps future operators may find a hollow
rubber cone, or calcined gypsum moulded
into the cavity and allowed there to harden,
of better service still. The time necessary
to give solidity to the cast is so short, that
no fears need be had on that account, espe-
cially if the composition is properly made.
The relative length of the flaps is obvious,
in order to avoid moving the compressor,

† Eevykelopiee der gesammten Med. und Chirurg.
Praxi! ii. p. 73.

and the whole operation, even to the coat of collodion, is completed before the meningophylax is relaxed. I will further mention, as an advantage for this operation, that the assistance necessary can be rendered by any one having a moderate degree of self-possession and fortitude, and that the after treatment can be intrusted to most nurses. The operation once finished, no essential part of it need to be repeated, nor does the uncertainty in the maintenance of uniform pressure, so much depended upon in puncture followed by a hernial support, leave the success of the operation in hands little qualified to guard it effectually.

—Cincinnati Lancet and Observer.

GUN-SHOT WOUND OF THE KNEE-JOINT.

By R. H. JOHNSON, M.D., Cincinnati.

G. T. D., aged 25, March, 1864, was shot from behind, through the right knee-joint, with a small pistol-ball, at the moment of passing out and over the threshold of the door of a saloon, the limb being flexed just as the foot was raised to make the stride. The ball, on entering the popliteal space, evidently did not touch either of the three synovial bursae beneath the adductor magnus, nor the popliteal artery, nor either of its branches—the anterior and posterior tibial—as not a drop of synovia or arterial blood issued from the wound either at entrance or exit of the ball; the latter wound being a little to the left of the centre of the lower edge of the patella. I at first surmised that the ball might have made the half circuit of the joint, but critical examination failed to find any evidence of it. The ball had passed directly through the joint, and without producing any fracture, as the sequel proved. It must have passed between the two lateral eminences, the tuberosities or spine of the tibia; nor was it deflected from its course by the double head of the gastrocnemius, as they are separated when the limb is flexed. The patella was uninjured.

Treatment and Result.—No mechanical pneumatic occlusion of the wounds was applied, as they soon became dry, and apparently healed by first intention—nature obviating the necessity of art appliances. Enormous enlargement of the joint and limb took place, which was combated successfully with free and repeated application of leeches, cold-water dressing, perfect rest and spare diet.

At one of my visits I was surprised to find an enormous poultice covering the joint and part of the limb, which I threw out of the window, and learned that a medical friend of the family had been called in by some one, who had applied the poultice. I refused to have anything further to do with the case if to be interfered with in this way—impressed the importance of avoiding suppuratio and consequent exhaustion, and perhaps ankylosis or death, and demanded to know whether I should continue to treat him. By his consent and desire, I continued, and the case went on to a rapid and successful termination. In six weeks he was out on crutches, with daily increasing flexion, resulting in such good use of the limb—the joint—at the end of four months, that he went to Indiana and assisted his father in the harvest field, the joint not in the least ankyloitic. I saw him today, October 15, when he informed me that the only trouble he had ever had, and still has occasionally, is a neuralgic twitching pain for a moment or two.

What must have been the result had the poultice treatment been continued, as was too often the case in the late war, it is easy to conceive—ankylosis, exhaustion, suppuration, and perhaps death from pyaemia. I have had remembrance of the death of a gallant colonel of one of the regiments of the 14th brigade, 2d division, army of the Cumberland, from this poultice treatment, on board a steamboat at Shiloh, and when I visited him, reconstituted with him and his attendants, warning them of the result, which was exhaustion, suppuration and death from pyaemia.—Ibid.

Reports of Medical Societies.

OBSTETRICAL SOCIETY OF BOSTON. SECRETARY, DAVID F. LINCOLN, M.D.

OCTOBER 9th, 1869.—The society met at the house of Dr. Wellington, at 74, P.M. In the absence of the President, the chair was occupied by Dr. Minor, Vice President.

Dr Wellington spoke of a case of labor which he saw in consultation. Upon his arrival, he found the uterus contracting with vigor, but apparently without effecting any change in the position of the child. This condition had existed for two hours. The presentation was a natural one, the head had passed the brim of the pelvis, and no obstruction to its progress was apparent. The forceps was applied, and the child delivered without difficulty. Dr. W. thought that such retardation of labor might be due.