SOUTHERN

MEDICAL AND SURGICAL JOURNAL.

EDITED BY

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MEDICAL COLLEGE OF GEORGIA.

"Je prends le bien où je le trouve."

VOL. XIV.—1858.—NEW SERIES.

AUGUSTA, GA:
J. MORRIS, PRINTER AND PUBLISHER.
1858.
Case of Diabetes Mellitus. Treated by Joseph Jones, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

Irish laborer, entered the Savannah Marine Hospital and Poor House, July 17th, 1857: age 24; height 5 feet 7 inches; light hair, blue eyes, scanty reddish yellow whiskers; greatly emaciated—arms and legs resemble those of a skeleton; ankles cedematous. Weight, in health, 140 lbs.; now, it cannot be more than 90 lbs.

Complained of continued pain in his head and bones, loss of strength, a voracious appetite, insatiable thirst, disordered digestion and a continued and exhausting diarrhoea.

Had no fever and no enlargement of liver or spleen. Upon physical exploration the action of the heart and lungs appeared to be normal.

The attempt was made to arrest the diarrhoea. Hope's mixture produced a temporary effect, but did not arrest the waste of tissue. Opium, chalk mixture, and the usual remedies for diarrhoea were administered. They checked the diarrhoea temporarily, but did not arrest the waste of tissue and loss of muscular and nervous force.

His diet was strictly guarded. It was found that the greater portion of the meat which he ate, passed entirely through the ali-
mentary canal, and was voided in the form of fetid undigested masses.

The patient was placed upon farinaceous diet—arrow-root, rice, and boiled milk and rice. Under this regimen, the stools became less numerous, and improved in appearance, but the destruction of tissue and loss of power was not arrested.

External applications had no effect whatever upon the pain in his head and limbs. Strychnia, in small doses, failed to strengthen his digestive apparatus and nervous system.

This treatment was continued for three weeks, and during this time his progress was steadily downwards. His tissues continued to waste away, and his strength every day grew less.

August 7th. Pulse 70. Temperature of Atmosphere, 81°F. 
Respiration 19. Hand, 96°F. under Tongue, 100°F.

August 8th. Pulse 64. Temperature of Atmosphere, 81°F. 
Respiration 18. Hand, 97°F. under Tongue, 100°F.

Examination of Urine.—Reaction slightly acid.
Specific gravity 1040.

Of a light straw color, clear limpid, resembling the urine of a female suffering with hysteria. The resemblance extended only to the color and amount passed. The high specific gravity of the urine of this patient, at once distinguished it from the abundant light colored urine often passed by hysterical females. The amount of urine passed by this patient during the 24 hours varied from one to one and a half gallons—an enormous quantity, considering his reduced state, and the large amount of solid matters held in solution in the urine.

Trommer's, Moore's, and the fermentation tests and the rapid formation of the Torula Cerevisiae, gave unequivocal evidence of the presence of grape sugar in large amount.

Chemical analysis showed that the specific gravity of the urine was due, in great measure, to the large amount of grape sugar which it held in solution.

Examination of Blood.—Specific gravity of Blood, ... 1043.2
Specific gravity of Serum, ... 1022.2

Coagulation of the blood commenced in a few minutes after it was drawn, and the clot was firm.
Under the microscope, the colored corpuscles were normal in color and form. They had a great tendency to stick together and form rolls, as in the blood of inflammation, and in the blood of the horse.

This phenomenon resembled, in all respects, that which occurs in well marked cases of inflammation.

The colorless corpuscles appeared to be deficient in numbers.

Serum of a light straw color. When the serum was mixed with an equal quantity of water, and treated with a few drops of hydrochloric acid, sufficient to neutralize its alkaline reaction, no coagulation took place, even after prolonged boiling.

Nitric acid produced prompt coagulation of the albumen of the serum.

<table>
<thead>
<tr>
<th>WATER</th>
<th>SOLID MATTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1000 parts of Blood, 838.510</td>
<td>In 1000 parts of Blood, 161.490</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Serum, 922.341</td>
<td>&quot; &quot; &quot; Serum, 77.659</td>
</tr>
<tr>
<td>(1) &quot; &quot; &quot; Liquor Sanguinis, - - 919.039</td>
<td>(1) &quot; &quot; &quot; Liquor Sanguinis, - - 80.961</td>
</tr>
<tr>
<td>(2) 1000 parts of Liquor Sanguinis, - - 887.339</td>
<td>(2) 1000 parts of Liquor Sanguinis, - - 112.661</td>
</tr>
</tbody>
</table>

**FIXED SALINE CONSTITUENTS**

<table>
<thead>
<tr>
<th>WATER</th>
<th>SOLID MATTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1000 parts of Blood, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Serum, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>(1) &quot; &quot; &quot; Liquor Sanguinis, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>(2) &quot; &quot; &quot; Liquor Sanguinis, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; Blood Corpuscles of 1000 parts of Blood, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; 1000 parts of Dried Blood Corpuscles, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Moist Blood Corpuscles, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Dried Residue of Blood, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; &quot; &quot; ” Serum, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>(1) &quot; &quot; &quot; &quot; &quot; &quot; &quot; &quot; Liquor Sanguinis, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>(2) &quot; &quot; &quot; &quot; &quot; &quot; &quot; Liquor Sanguinis, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; Solid Matters of Serum of 1000 parts of Blood, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
</tbody>
</table>

**1000 Parts of Blood Contained**

<table>
<thead>
<tr>
<th>WATER</th>
<th>SOLID MATTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>Dried Blood Corpuscles, 92.702</td>
<td>Dried Organic Matters, - 88.259</td>
</tr>
<tr>
<td>&quot; Fixed Saline Constituents, - 4.443</td>
<td></td>
</tr>
<tr>
<td>Fibrin, - - - - - - - -</td>
<td>- - - - - - - -</td>
</tr>
<tr>
<td>&quot; Fixed Saline Constituents, - 2.806</td>
<td></td>
</tr>
<tr>
<td>Albumen, - - - - 49.539</td>
<td>Dried Organic Matters, - 48.157</td>
</tr>
<tr>
<td>&quot; Fixed Saline Constituents, - 1.382</td>
<td></td>
</tr>
<tr>
<td>Extractive Matters, - - 16.003</td>
<td>Dried Organic Matters, - 12.866</td>
</tr>
<tr>
<td>&quot; Fixed Saline Constituents, - 3.137</td>
<td></td>
</tr>
</tbody>
</table>
### 1000 Parts of Blood Contained

<table>
<thead>
<tr>
<th>Component</th>
<th>Content</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moist Blood Corpuscles, 370:808</td>
<td>Water</td>
<td>278.106</td>
</tr>
<tr>
<td></td>
<td>Dried Organic Residue</td>
<td>88.259</td>
</tr>
<tr>
<td></td>
<td>Fixed Saline Constituents</td>
<td>4.443</td>
</tr>
<tr>
<td>Liquor Sanguinis, 629:192</td>
<td>Water</td>
<td>560.040</td>
</tr>
<tr>
<td></td>
<td>Albumen</td>
<td>48.157</td>
</tr>
<tr>
<td></td>
<td>Extractive and Coloring Matters</td>
<td>12.866</td>
</tr>
<tr>
<td></td>
<td>Albumen</td>
<td>1:382</td>
</tr>
<tr>
<td></td>
<td>Extractive and Coloring Matters</td>
<td>3:137</td>
</tr>
<tr>
<td></td>
<td>Fibrin</td>
<td>2:606</td>
</tr>
<tr>
<td>1000 Parts of Moist Blood Corpuscles Contained</td>
<td>Water</td>
<td>750.001</td>
</tr>
<tr>
<td>Dried Organic Matters,</td>
<td>238.018</td>
<td></td>
</tr>
<tr>
<td>Fixed Saline Constituents,</td>
<td>11:981</td>
<td></td>
</tr>
</tbody>
</table>

### 1000 Parts of Liquor Sanguinis Contained

<table>
<thead>
<tr>
<th>Component</th>
<th>Content</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Water</td>
<td>919.039</td>
</tr>
<tr>
<td>Albumen,</td>
<td>59.737</td>
<td>58.110</td>
</tr>
<tr>
<td>Extractive and Coloring Matters,</td>
<td>13.670</td>
<td>3:682</td>
</tr>
<tr>
<td>Fibrin,</td>
<td>17.345</td>
<td>3:302</td>
</tr>
<tr>
<td>(2)</td>
<td>Water</td>
<td>886.740</td>
</tr>
<tr>
<td>Albumen,</td>
<td>78.733</td>
<td>76.537</td>
</tr>
<tr>
<td>Extractive and Coloring Matters,</td>
<td>24:484</td>
<td>4:985</td>
</tr>
<tr>
<td>Fibrin,</td>
<td>29.469</td>
<td>4:459</td>
</tr>
</tbody>
</table>

The method of analysis employed in these investigations has been described by the author ('1) in his Inaugural Dissertation for the degree of M.D. in the University of Pennsylvania, and in his Chemical(2) and Physiological Investigations, published by the Smithsonian Institution, and is similar in many respects to that employed by MM. Becquerel (3) and Rodier, Bowman,(4) and others. (5)

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(2) Investigations, Chemical and Physiological, relative to certain American Vertebrata. By Jos. Jones. Smithsonian Contributions to Knowledge. 1856.
All physiological chemists have failed to ascertain with absolute accuracy the amount of solid matter in the serum of 1000 parts of blood.

The proportion by which this is determined, although the closest approximation to the truth that can be made in the present state of science, is founded upon the erroneous assumption that all the water of the blood exists in the liquor sanguinis. C. Schmidt has shown that three-fourths of the colored blood corpuscles are composed of water. Hence, to obtain the relation of the moist blood corpuscles to the liquor sanguinis, we must multiply the dried residue of the corpuscles by 4.

Physiological chemists possess no method by which the blood corpuscles can be determined with absolute accuracy.

It is evident, from these facts, that when we attempt to calculate the moist blood corpuscles and liquor sanguinis of 1000 parts of blood, whatever error entered into the calculation of the solid matters of the blood corpuscles, will be increased four fold, whilst the error in the calculation of the constituents of the liquor sanguinis will increase, not only in a direct ratio to the errors in the calculation of the blood corpuscles and solid matters of the serum of 1000 parts of blood, but also in a definite ratio to the actual increase or decrease in the 1000 parts of moist blood corpuscles. That error exists in this method of analysis is rendered evident when we calculate the constituents of 1000 parts of liquor sanguinis, from the data obtained by subtracting the moist blood corpuscles from 1000 parts of blood, and considering the remainder liquor sanguinis.

The results thus obtained do not correspond with those obtained from the actual analysis of 1000 parts of liquor sanguinis.

To render this error evident in the present method of analysis, I have in this and subsequent analyses, stated the actual analysis of 1000 parts of liquor sanguinis, and that calculated from the constitution of the liquor sanguinis determined in 1000 parts of blood, by the subtraction of the moist blood corpuscles.

The former, by actual experiment, is always marked (1); the latter, by calculation, is always marked (2).

We will now compare this analysis of the blood of our diabetic
patient with—1st, analyses of normal blood, and 2nd, with analyses of abnormal blood.

The following is given by Lehmann,\(^6\) as the standard constitution of healthy human blood.

<table>
<thead>
<tr>
<th>1000 Parts of Moist Blood Corpuscles Contain</th>
<th>1000 Parts of Liquor Sanguinis Contain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water, - - - - - - - - - - - - 688-000</td>
<td>Water, - - - - - - - - - - 902-900</td>
</tr>
<tr>
<td>Solid Constituents, - - - - - - - - - - - 312-000</td>
<td>Solid Constituents, - - - - - - - - 97-100</td>
</tr>
<tr>
<td>Specific Gravity, - - - - - - - - - - - 1088-5</td>
<td>Specific Gravity, - - - - - - - - 1028-5</td>
</tr>
<tr>
<td>Haematin, - - - - - - - - - - - 16-750</td>
<td>Fibrin, - - - - - - - - - - 4-050</td>
</tr>
<tr>
<td>Globulin &amp; Cell Membrane, 282-220</td>
<td>Albumen, - - - - - - - - - - 78-840</td>
</tr>
<tr>
<td>Fat, - - - - - - - - - - - 2-310</td>
<td>Fat, - - - - - - - - - - 1-720</td>
</tr>
<tr>
<td>Extractive Matters, - - - - - - - - - - - 2-600</td>
<td>Extractive Matters, - - - - - - - - 3-940</td>
</tr>
<tr>
<td>Mineral Substances without Iron, - - - - - - - - - - - 8-120</td>
<td>Mineral Substances, - - - - - - - - 8-550</td>
</tr>
</tbody>
</table>

The following are the physiological limits of the variations of the constituents of the blood, as established by the researches of MM. Becquerel\(^7\) and Rodier.

In 1000 Parts of Blood,

The Water may vary from 760-000 to 800-000

" Specific Gravity of the Blood may vary " 1055 " 1063 "
" Globules " " " " 120-000 " 150-000 "
" Fibrin " " " " 2-000 " 3-500 "
" Solid Matters of the Serum " " " " 90-000 " 105-000 "
" Cholesterine " " " " 0-075 " 0-150 "
" Animal Soap, " " " " 1-000 " 2-000 "
" Serolin " " " " 0-010 " 0-030 "
" Chloride of Sodium " " " " 2-000 " 5-000 "
" Soluble Salts " " " " 1-500 " 4-000 "
" Phosphates " " " " 0-500 " 1-000 "

In 1000 Parts of Serum,

The Specific Gravity of the Serum may vary from 1027 to 1032

" Water of the Serum " " " " 880-000 " 900-000 "
" Solid Matters " " " " 100-000 " 120-000 "
" Albumen " " " " 70-000 " 90-000 "

The following is the typical formula of the constitution of the blood in health, adopted by MM. Becquerel\(^8\) and Rodier:

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\(^{(7)}\) Pathological Chemistry of MM. Becquerel and Rodier, English ed., p. 90.

Jones, on Diabetes Mellitus. 297

Analysis of 1000 Parts of Blood.

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood</td>
<td>1060.000</td>
</tr>
<tr>
<td>Water</td>
<td>781.600</td>
</tr>
<tr>
<td>Globules</td>
<td>135.000</td>
</tr>
<tr>
<td>Albumen</td>
<td>70.000</td>
</tr>
<tr>
<td>Fibrin</td>
<td>2.500</td>
</tr>
<tr>
<td>Fatty Matters, Extractive</td>
<td>10.000</td>
</tr>
<tr>
<td>Phosphates, Free Salts</td>
<td>0.550</td>
</tr>
<tr>
<td>Iron</td>
<td>0.350</td>
</tr>
</tbody>
</table>

Analysis of 1000 Parts of Serum.

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity of Serum</td>
<td>1028.000</td>
</tr>
<tr>
<td>Water</td>
<td>908.000</td>
</tr>
<tr>
<td>Albumen</td>
<td>80.000</td>
</tr>
<tr>
<td>Extractive Matters and Free Salts</td>
<td>12.000</td>
</tr>
</tbody>
</table>

If we carefully compare the analysis of the blood of our patient with these analyses of normal blood, we will find—

1. The specific gravities of the blood and serum are much lower than the normal standard.

2. The colored corpuscles are diminished in numbers, the dried corpuscles being only 92.702, and the moist blood corpuscles 370.808, whilst in health the dried corpuscles generally average 135.000 and the moist corpuscles 540.000.

3. The albumen of the liquor sanguinis is much less than normal, being only 49.539 in the 1000 parts of blood, whilst in health, it ranges from 70 to 90.

4. The extractive and coloring matters are 12.366, and are greater in amount than normal. When we compare the extractive matters with the diminished albumen and blood corpuscles, it is evident that they are far more abundant than normal.

5. The fixed saline constituents are normal in amount as compared with normal blood, but increased when compared with the diminished albumen and blood corpuscles.

It is important that we should, in the next place, compare the blood of this patient, reduced in flesh and strength to the last degree, with the blood of individuals whose blood has been depraved, and forces exhausted by other diseases.

The following examples, are selected from numerous analyses of the blood of patients suffering with malarial fever, which I conducted in the Savannah Marine Hospital and Poor House, during the last summer and fall:

**Case I. Intermittent Fever, neglected.**—Irish laborer, entered the Savannah Poor House Sept. 23rd: age 22; height 5 feet 8 inches. Had been working in the marshes along the Savannah
river, and suffered with chill and fever for two months, during which time he had no medical attendance. Complexion sallow; tongue, lips and gums pale; digestion impaired. Complains of great weakness. Flesh not much reduced, but feels soft and unnatural.

Examination of Blood.—Blood watery in appearance—coagulated slowly in 30 minutes. Reaction decidedly alkaline. In the specific-gravity-bottle filled with blood, the colored corpuscles gravitated towards the bottom and left above a light yellow transparent clot. After standing 20 hours, the clot had contracted but little, and its consistency was very weak. Serum, of a light yellow color.

Specific Gravity of Blood, - - - 1030.5
Specific Gravity of Serum, - - - 1021.3

<table>
<thead>
<tr>
<th>WATER</th>
<th>SOLID MATTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1000 parts of Blood, 877.553</td>
<td>In 1000 parts of Blood, 122.447</td>
</tr>
<tr>
<td>“ “ “ Serum, 927.757</td>
<td>“ “ “ Serum, 72.243</td>
</tr>
<tr>
<td>(2) 1000 parts of Liquor Sanguinis, - 911.124</td>
<td>(2) “1000 parts of Liquor Sanguinis, - 88.876</td>
</tr>
<tr>
<td>“ in Serum of 1000 parts of Blood - 68.435</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIXED SALINE CONSTITUENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1000 parts of Blood, - - - - 3.316</td>
</tr>
<tr>
<td>“ “ “ Serum, - - - - 3.326</td>
</tr>
<tr>
<td>(1) “ “ “ Liquor Sanguinis, - - - - 3.328</td>
</tr>
<tr>
<td>(2) “ “ “ Liquor Sanguinis, - - - - 3.965</td>
</tr>
<tr>
<td>“ Serum of 1000 parts of Blood, - - - - 3.141</td>
</tr>
<tr>
<td>“ 1000 parts of the Solid Matters of Blood, - - - - 27.053</td>
</tr>
<tr>
<td>“ “ “ “ “ “ “ Serum, - - - - 45.901</td>
</tr>
<tr>
<td>(1) “ “ “ “ “ “ “ Liquor Sanguinis, - - - - 44.779</td>
</tr>
<tr>
<td>(2) “ “ “ “ “ “ “ Liquor Sanguinis, - - - - 44.612</td>
</tr>
<tr>
<td>“ Blood Corpuscles of 1000 parts of Blood, - - - - 0.175</td>
</tr>
<tr>
<td>“ 1000 parts of Moist Blood Corpuscles, - - - - 0.841</td>
</tr>
</tbody>
</table>

1000 Parts of Blood Contained

| Water, | 587.553 |
| Fibrin, | 1.925 |
| Albumen and Extractive, 68.335 | Dried Organic Residue, 65.194 |
| and Coloring Matters, | Fixed Saline Constituents, 3.141 |
The urine of the patient was of low specific gravity, diminished in amount, and contained no grape sugar.


German Butcher, entered the Savannah Poor House Sept. 25th: age 23; height 5 feet 10 inches; weight, in health, 180 lbs.

His present weight cannot be more than 110 lbs. Has been suffering with chill and fever for two months, and has had no medical attendance. Sallow, anaemic complexion; flesh and strength greatly reduced; nervous and muscular forces very feeble. Was brought into the Hospital in a comatose state.

Stimulants, sinapisms, cut cups to the temples and back of neck, and blisters to the epigastrium and back of neck, aroused him from this comatose condition.

A few days after his entrance into the hospital, a large abscess
formed upon the side of his head, in the region of the ear, and joint and angle of the inferior maxillary bone.

Notwithstanding that this abscess was lanced, the pus formed an entrance into the external meatus auditorius.

Large masses of the cellular tissue and muscles sloughed away, and the angle and superior portion of the inferior maxillary bone were almost completely stripped of flesh. The abscess compelled him to lie upon the opposite side of his body, and the arm upon which the weight of the body rested swelled enormously, until it appeared to be ready to burst, and finally the skin over the biceps muscle changed to a black color, and sloughed off in a single night, leaving the red quivering muscles entirely exposed.

The biceps muscle sloughed entirely off from its lower attachment. Large ulcers appeared in various parts of his body.

The patient lingered, supported by tonics, nutritive diet and stimulants, for three weeks.

After death, his liver presented a color a shade lighter than the slate color of the malarial fever liver, and in many parts it was regaining its normal hue. The spleen was enlarged and in many parts completely degenerated in structure, being converted into pus and a substance resembling cheese. The surface of the spleen was covered with effused coagulable lymph, and bound to the liver by bands of coagulable lymph. The border next to the liver contained an abscess about the size of a walnut, filled with pus. The whole substance of the spleen was consolidated, and those portions which were not degenerated, resembled, when cut, the liver of malarial fever. The stomach showed the marks of chronic inflammation.

The glands of Peyer, in the lower portion of the intestinal canal, were enlarged, but pale, and not more congested with blood than usual.

Examination of the Blood of this patient four days after his entrance into the Hospital.—Blood coagulated slowly. In one specimen, the coagulation was remarkably slow, and the blood corpuscles gravitated towards the bottom of the vessel and left above a clear, golden colored clot. This transparent portion of the clot was about \( \frac{1}{4} \) of an inch in thickness.

Serum, of a deep golden color. Reaction of serum, alkaline.
### Specific Gravity of Blood
Specific Gravity of Serum, 1023.6

#### WATER

<table>
<thead>
<tr>
<th>In 1000 parts of Blood, 340.511</th>
<th>1000 parts of Serum, 913.950</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) &quot; &quot; &quot; 1000 parts of Liquor Sanguinis, 912.665</td>
<td></td>
</tr>
<tr>
<td>(2) &quot; &quot; 1000 parts of Liquor Sanguinis, 682.723</td>
<td></td>
</tr>
</tbody>
</table>

#### SOLID MATTERS

<table>
<thead>
<tr>
<th>In 1000 parts of Blood, 159.489</th>
<th>1000 parts of Serum, 86.050</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) &quot; &quot; &quot; 1000 parts of Liquor Sanguinis, 86.973</td>
<td></td>
</tr>
<tr>
<td>(2) &quot; &quot; 1000 parts of Liquor Sanguinis, 117.277</td>
<td></td>
</tr>
</tbody>
</table>

#### FIXED SALINE CONSTITUENTS

<table>
<thead>
<tr>
<th>In 1000 parts of Blood,</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot; &quot; Serum,</td>
</tr>
<tr>
<td>(1) &quot; &quot; &quot; Liquor Sanguinis,</td>
</tr>
<tr>
<td>(2) &quot; &quot; &quot; Liquor Sanguinis,</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Solid Matters of Blood,</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; Serum,</td>
</tr>
<tr>
<td>(1) &quot; &quot; &quot; &quot; Liquor Sanguinis,</td>
</tr>
<tr>
<td>(2) &quot; &quot; &quot; &quot; Liquor Sanguinis,</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; Blood Corpuscles,</td>
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<tr>
<td>&quot; &quot; &quot; &quot; &quot; Moist Blood Corpuscles,</td>
</tr>
<tr>
<td>&quot; Blood Corpuscles of 1000 parts of Blood,</td>
</tr>
<tr>
<td>&quot; Serum of 1000 parts of Blood,</td>
</tr>
</tbody>
</table>

#### 1000 Parts of Blood Contained

<table>
<thead>
<tr>
<th>Dried Organic Residue,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Saline Constituents,</td>
</tr>
<tr>
<td>Water,</td>
</tr>
<tr>
<td>Dried Blood Corpuscles,</td>
</tr>
<tr>
<td>Fibrin</td>
</tr>
<tr>
<td>Albumen, Extractive and Coloring Matters,</td>
</tr>
<tr>
<td>Dried Organic Residue,</td>
</tr>
<tr>
<td>Fixed Saline Constituents,</td>
</tr>
</tbody>
</table>

#### 1000 Parts of Blood Contained

| Dried Organic Residue, |
| Fixed Saline Constituents, |
| Water, |
| Moist Blood Corpuscles, |
| Fibrin, |

#### 1000 Parts of Moist Blood Corpuscles Contained

| Dried Organic Residue, |
| Fixed Saline Constituents, |
| Water, |
| Dried Organic Residue, |
| Fixed Saline Constituents, |
CASE III. *Bilious Remittent Fever.*—American Seaman, native of Boston, entered the Savannah Marine Hospital Sept. 26th: age 21; weight 150 lbs.; height 5 feet 10 inches. Muscular system moderately well developed.

This is his first trip to Savannah. Has been sleeping at night, on the deck of the ship in the open air. The captain compelled all his men to sleep on board the ship, which was lying along the low marshy shore below the city.

This patient was brought in comatose, and has been passing his urine and feces in bed.

Sept. 29th. Lies in a stupor; complexion sallow; teeth coated with sordes; tongue perfectly dry and as rough to the feeling as the surface of a newly sawed board. Pulse 120; Respiration 22.

*Examination of Blood.*—Blood coagulated slowly. Serum, of a deep golden color.

Nitric acid showed that this color was due to the presence of bile.

Reaction of serum, alkaline.

| Specific Gravity of Blood | - | - | 1040 |
| Specific Gravity of Serum | - | - | 1022 |

<table>
<thead>
<tr>
<th>WATER</th>
<th>SOLID MATTERS</th>
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<tbody>
<tr>
<td>In 1000 parts of Blood, 833·449</td>
<td>In 1000 parts of Blood, 166·551</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Serum, 912·386</td>
<td>&quot; &quot; &quot; Serum, 87·614</td>
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<tr>
<td>(1) &quot; &quot; &quot; Liquor</td>
<td>(1) &quot; &quot; &quot; Liquor</td>
</tr>
<tr>
<td>Sanguinis, - 910·798</td>
<td>Sanguinis, - 89·203</td>
</tr>
<tr>
<td>(2) &quot; 1000 parts of Liquor</td>
<td>(2) &quot; 1000 parts of Liquor</td>
</tr>
<tr>
<td>Sanguinis, - 875·813</td>
<td>Sanguinis, - 124·187</td>
</tr>
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</table>

"Serum of 1000 parts of Blood, - 80·033
### FIXED SALINE CONSTITUENTS

In 1000 parts of Blood,

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Amount</th>
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<tbody>
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<td>Water</td>
<td>6314</td>
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<tr>
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<tr>
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<td>8759</td>
</tr>
<tr>
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<td>6595</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Moist Blood Corpuscles</td>
<td>1648</td>
</tr>
<tr>
<td>&quot; &quot; &quot; Dried Residue of Blood</td>
<td>37909</td>
</tr>
<tr>
<td>&quot; Serum of 1000 parts of Blood</td>
<td>7558</td>
</tr>
<tr>
<td></td>
<td>5747</td>
</tr>
</tbody>
</table>

#### 1000 Parts of Blood Contained

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>833449</td>
</tr>
<tr>
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<td>85965</td>
</tr>
<tr>
<td>Fixed Saline Constituents</td>
<td>84400</td>
</tr>
<tr>
<td>Fibrin</td>
<td>1450</td>
</tr>
<tr>
<td>Albumen, Extractive and</td>
<td>74186</td>
</tr>
<tr>
<td>Coloring Matters</td>
<td>5747</td>
</tr>
</tbody>
</table>

#### 1000 Parts of Moist Blood Corpuscles Contained

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>258804</td>
</tr>
<tr>
<td>Dried Organic Residue</td>
<td>84400</td>
</tr>
<tr>
<td>Fixed Saline Constituents</td>
<td>0567</td>
</tr>
<tr>
<td>Water</td>
<td>574646</td>
</tr>
<tr>
<td>Albumen, Extractive and</td>
<td>74185</td>
</tr>
<tr>
<td>Coloring Matters</td>
<td>5747</td>
</tr>
<tr>
<td>Fibrin</td>
<td>1450</td>
</tr>
</tbody>
</table>

#### (1) 1000 Parts of Liquor Sanguinis Contained

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>910797</td>
</tr>
<tr>
<td>Albumen, Extractive and Coloring</td>
<td>80996</td>
</tr>
<tr>
<td>Fixed Saline Constituents</td>
<td>1587</td>
</tr>
<tr>
<td>Fibrin</td>
<td>6620</td>
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#### (2) 1000 Parts of Liquor Sanguinis Contained

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>875813</td>
</tr>
<tr>
<td>Albumen, Extractive and Coloring</td>
<td>113064</td>
</tr>
<tr>
<td>Fixed Saline Constituents</td>
<td>8758</td>
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<tr>
<td>Fibrin</td>
<td>2209</td>
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</tbody>
</table>

Under the use of stimulants, sulphate of quinia, and nutritious diet, this patient recovered, slowly. He was confined to his bed three weeks, and at the end of this time, exhibited
the effects of the bilious remittent fever, in his pale, sallow, anaemic countenance, pale lips and gums, and tottering gate.

The violent nature of the malarial fever, contracted by sleeping in the open air in the low marshy land bordering our fresh water rivers, is forcibly illustrated by the subsequent history of the crew to which this patient belonged.

A few days after his admission into the hospital, the captain weighed anchor and sailed for New York. Before getting well out to sea, himself and the whole of his crew were taken sick. There was not a man with strength to work a pump or furl a sail. Fortunately a small vessel perceived their signals of distress, and towed them into Darien. Before reaching this port the captain and five out of seven of the crew had died. There were but two remaining out of eight, and these were extremely ill.

If we compare the blood of these cases with that of health, and with the blood of the patient suffering with diabetes mellitus, we will observe the following points of agreement and disagreement:

1. The colored blood corpuscles are diminished greatly and rapidly in malarial fever. This destruction of the colored blood corpuscles is far more rapid in malarial fever than in diabetes mellitus.

2. The salts of the colored blood corpuscles are diminished to a remarkable extent in malarial fever—whilst they are normal in amount in the blood of diabetes mellitus.

3. The blood coagulates slowly, and the clot is soft, in malarial fever—whilst the reverse was the case in this specimen of diabetic blood.

4. The fibrin is often diminished in malarial fever, and the serum presents a golden color—whilst in this case of diabetes mellitus the fibrin was slightly increased and the color of the the serum was normal.

That the poison of malarial fever induces profound changes in the colored blood corpuscles, and other constituents of the blood, I have demonstrated by the following facts:

(a). The urine of patients suffering with malarial fever contains an increased quantity of iron. The increase of the iron in the urine is subsequent to the destruction of the colored corpuscles in the blood.
(b). In examinations of the organs after death, from all the forms of malarial fever—intermittent, remittent and congestive—I have observed that the dark blood of the spleen and liver do not change to the arterial hue when exposed to the action of the oxygen of the atmosphere.

After death from phthisis, cirrhosis of the liver, organic disease of the circulatory apparatus, and apoplexy, and mechanical injuries, as far as my observations extend, the blood of the spleen and liver always change to the arterial hue when exposed to the action of the oxygen of the atmosphere.

(c). Animal starch accumulates in the malarial-fever liver—whilst grape sugar, as far as my observations extend, is absent. I have tested the livers of malarial fever for grape sugar and starch. An abundance of starch (9) was obtained, without a trace of grape sugar.

The livers were set aside, and examined after intervals of twelve hours. The last examination was made thirty-six hours after the first. At every examination the result was the same—an abundance of animal starch, and no grape sugar.

These facts are important, not only in their bearing upon malarial fever, but also in their bearing upon diabetes mellitus. M. Cl. Bernard (10) has demonstrated that the transformation glycogenic hepatic matter (animal starch) formed by the liver, into glucose, is the result of the action of a special ferment, which is formed and exists in the blood, independent of the liver.

From the facts which we have previously stated, it is evident that in malarial fever, this ferment is destroyed, whilst the liver still possesses the power of transforming the nitrogenized and non-nitrogenized elements into animal starch.

We have now facts sufficient, to draw important distinctions between malarial fever and diabetes mellitus.

(9) So abundant is this animal starch in the malarial fever liver, that if a small particle of the substance of the liver be mashed upon a glass slide, treated with a saturated solution of iodine in alcohol, and viewed under the microscope, numerous beautiful blue masses of this animal starch, colored by the iodine, will be seen. If the fibrous capsule be torn off from the surface of the liver, spread upon a glass slide, and treated with tincture of iodine, these blue masses will be seen scattered amongst the meshes of the fibrous tissue. With reference to the discovery of animal starch, see American Journal of Medical Sciences, Oct. 1857, p. 549.

(10) Moniteur de Hôpitaux, April 14, 1857; also, American Journal of Medical Sciences, July, 1857, p. 203
In both diseases, the blood corpuscles may be greatly diminished.
In both diseases the nervous and muscular forces may be correspondingly diminished.
Here the analogy ceases.
The destruction of the colored corpuscles is rapid in severe types of malarial fever, and slow in all the forms of diabetes mellitus. The salts of the blood corpuscles are normal, if not increased in this case of diabetes mellitus, whilst they are greatly diminished in malarial fever. In malarial fever, the blood loses its power of changing its color in the spleen and liver. In malarial fever, the color of the liver and the character of the bile is altered, and the spleen is enlarged, softened and filled with a purplish brown mud.
In diabetes mellitus, all the organs are normal in appearance.
In malarial fever, the blood has lost its power of converting animal starch into glucose. In diabetes mellitus this power is greatly increased.

The following table affords a comparison of Normal, Diabetic and Malarial Blood:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; &quot; Liquor Sanguinis</td>
<td>200,000</td>
<td>240,000</td>
<td>161,490</td>
<td>122,447</td>
<td>159,489</td>
<td>166,551</td>
</tr>
<tr>
<td>Dried Blood Corpuscles in 1000 parts of Blood</td>
<td>100,000</td>
<td>120,000</td>
<td>80,961</td>
<td>74,275</td>
<td>86,978</td>
<td>89,203</td>
</tr>
<tr>
<td>Moist &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td>120,000</td>
<td>150,000</td>
<td>92,702</td>
<td>61,987</td>
<td>79,437</td>
<td>85,968</td>
</tr>
<tr>
<td>Liquor Sanguinis</td>
<td>480,000</td>
<td>600,000</td>
<td>370,888</td>
<td>207,948</td>
<td>317,748</td>
<td>343,872</td>
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<tr>
<td>Fibrin in 1000 parts of Blood</td>
<td>400,000</td>
<td>520,000</td>
<td>629,192</td>
<td>792,052</td>
<td>682,252</td>
<td>666,128</td>
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<tr>
<td>Fixed Saline Constituents in 1000 parts of Moist Blood Corpuscles</td>
<td>2.00</td>
<td>3.50</td>
<td>2.806</td>
<td>1.925</td>
<td>0.877</td>
<td>1.450</td>
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<td>&quot; &quot; &quot; &quot; &quot; &quot; Dried Blood Corpuscles</td>
<td>8.120</td>
<td>10.500</td>
<td>11.981</td>
<td>0.841</td>
<td>10.728</td>
<td>1.648</td>
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<td>&quot; &quot; &quot; &quot; &quot; &quot; Dried Blood</td>
<td>65.000</td>
<td>70.000</td>
<td>49.916</td>
<td>3.240</td>
<td>42.914</td>
<td>6.595</td>
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<tr>
<td>&quot; &quot; &quot; &quot; &quot; &quot; Solid Matters of Liquor Sanguinis</td>
<td>70.000</td>
<td>80.000</td>
<td>56.108</td>
<td>27.083</td>
<td>36.341</td>
<td>37.909</td>
</tr>
<tr>
<td>&quot; &quot; &quot; &quot; &quot; &quot; Liquor Sanguinis</td>
<td>88.053</td>
<td>95.000</td>
<td>68.488</td>
<td>44.779</td>
<td>30.206</td>
<td>75.558</td>
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<tr>
<td>&quot; &quot; &quot; &quot; &quot; &quot;</td>
<td>8.550</td>
<td>10.100</td>
<td>5.320</td>
<td>3.326</td>
<td>2.647</td>
<td>6.680</td>
</tr>
</tbody>
</table>
We have now all the necessary facts for the intelligent treatment of this case.

The indications in the treatment of this case of diabetes mellitus are—

(1). To strengthen digestion.

His stomach fails to digest the nitrogenized elements—the very substances which he needs, to supply the rapid waste of his tissues.

(2). To afford the organic and inorganic materials of structure.

(3). To quiet and strengthen the nervous system.

(4). To arrest the destruction and transformation of the elements of the blood, tissues and food, into animal starch and grape sugar.

(1). To strengthen Digestion.—Meat passed entirely through the alimentary canal, without being digested. This is clear evidence that the gastric and pancreatic juices do not perform their offices. The active and essential principle of the gastric juice being pepsine, this must first be supplied. If pepsine and an acid be supplied, digestion will take place in a weak, diseased stomach, as well as in the healthy stomach. The truth of this assertion has been established by the experiments of Dr. L. Corvisart of Paris, (11) to whom the profession is indebted for the introduction of pepsine into the practice of medicine.


“Recherches ayant pour but, d’administrer aux malades qui ne digèrent point des aliments tours digérés par le suc gastrique des animaux.” Comptes Rendus, Aug. 16th, 1852—Sept. 6th, 1852.

Etudes sur les Aliments et Nutriments—Nouvelle Methode pour le traitement des malades dont l’estomac ne digère point.”—L’Union Médicale, 1854, p. 17.


(13) Sur l’apesie (on absence de digestion) chez les enfants, et sur le traitement de cette maladie par la pepsine.—L’Union Médicale, Jan. 12th, 1856.

(14) Observation d’un cas de consomption ultime, traitée par la Poudre Nutrimentine.—Bulletin Gen de Therap. t. xlix. p. 263.

(15) Artificial Digestion as a Remedy in Dyspepsia, Apepsia, and their results. By Edward Ballard, M.D., London, 1857. This valuable work contains the method of preparing the pepsine, and also the report of numerous cases of disordered digestion, successfully treated with pepsine, by Dr. Ballard and other practitioners of medicine.

(16) In Dyspepsia of a year’s duration.

18*
Cahagnet, (17) Parise, (18) Huet, (19) Chambers, (20) Nelson (21) and others, (22) have testified to the efficacy and value of pepsine in various diseases.

The fourth stomach of ruminants (rennet bag) is generally recommended as a source of pepsine. In hospital practice, however, I preferred to employ the stomach of the pig, for two reasons:

The pig is an omniverous animal. Its food and digestive process resembles more nearly that of man, and consequently its gastric juice must be better adapted to his wants.

For hospital purposes, the stomach of the pig can be much more readily obtained and prepared, than that of the cow or sheep.

When pepsine can be obtained pure from the apothecaries, or when the physician has time to prepare it himself, the Poudres Nutrimentives (23) of Corvisart is by far the most elegant and portable preparation.

(17) In Dyspepsia and Vomittings of several years' duration.
(18) In Dyspepsia of early Pregnancy.
(19) Gastralgia after food of several years' duration.
(22) Rennet in Diabetes Mellitus, by Dr. James Gray.—Glasgow Med. Journal, Oct. 1856. See also American Journal of Medical Sciences, Jan. 1857, p. 25.
(23) The following are the directions, given by M. Boudalt, for the preparation of the medicine:—"Take a sufficient number of rennet bags (the fourth stomach of the ruminants), open and reverse them, and wash them under a thin stream of cold water; scrape off the mucous membrane, reduce it to a pulp, and macerate it in distilled water for twelve hours; filter; add to the liquor a sufficient quantity of acetate of lead, and after separating the precipitate, pass through it a current of sulphuretted hydrogen; filter again; evaporate at a low temperature to the consistence of a syrup, which is mixed intimately with starch pulverized, and dried at a temperature of 100° centig. In this state the gentle application of heat will reduce it to a dry mass readily reducible to a powder of uniform efficiency."

The power of the pepsine thus obtained, varies, and before the use of a specimen, we should first test its transforming power. The standard dose is that quantity of the powder, which when acidulated with three drops of lactic acid and added to 15 grammes (225 grains) of water, would transfer 6 grammes (90 grs.) of fresh fibrin finely cut up, and kept in a bottle, at a temperature of 40° centig., for twelve hours, with occasional shaking. The average dose of the "Poudre Nutrimentive" is 15 grains. It may be taken dry or in solution, in unfermented bread, or in a spoonful of soup, or in sweetened water. It should always be taken with, or at the commencement of the meal on which it is to act.—Ballard on Artificial Digestion, p. 10. See also, Mémoire sur le principe digestif, les préparations nutrimentives, et les moyens propres à reconnaître et à mesurer leur action.—Acad. Imp. de Med., Séance du 14 Fevrier, 1854, et Moniteur des Hôpitaux, 16 Fevrier, 1854.
B. Cut a pig's stomach into thin slices, and pour upon it one pint of vinegar, and preserve from decomposition (if the weather be warm), by surrounding with ice.

The pepsine and vinegar will reduce the tissues of the stomach to a uniform mass, or rather, fluid. Dose, fʒ three times a day, mixed with cold mutton or beef soup.

This preparation is useful for hospital purposes, because it is easily prepared, and at the same time is more efficacious than the pepsine ordinarily sold in the shops.

Chambers (24) and other (25) have shown that much of the pepsine now sold, possesses but feeble transforming powers.

Pepsine is not the only substance concerned in the digestion of albumenoid substances.

The connective tissues and muscular fibres are disintegrated and softened, but never completely dissolved by the gastric juice.

The ultimate fibrillae of muscles which have escaped the action of the gastric juice pass into the small intestines, and are there digested by the pancreatic juice.

M. L. Corvisant (26) communicated to the Imperial Academy of Sciences, April 6th, 1857, a Memoir on the Power of the Pancreas to Digest Azotized Food, in which he confirmed the assertion of Purkinge and Pappenheim, that the secretion of the pancreas is endowed, like the gastric juice, with the property of

The following is the mode adopted and recommended by Dr. James Gray of preparing the rennet:

"The stomach of a calf (and the younger it is the better) is gently washed with water, taking care not to injure the mucous membrane; it is then salted, tied up and allowed to dry. After this, it is cut into small pieces, macerated in a pint and a half, or two pints of water, according to the size of the stomach, for four days or longer in winter, shaking it at intervals; the fluid is then poured off and bottled, and to test its power, a spoonful may be added to a pint of warm milk, which, if it curdles, it is now fit for use. A little spirits, or decoction of sparrow-grass, may be added to make it keep. The dose of rennet thus prepared is a tablespoonful, three, four, or six times a day, about half an hour after each meal, and during the process of digestion, followed shortly after by an alkali, to neutralize the lactic acid formed. That which I recommend is the alkaline tripasic phosphate of soda; but the carbonate of potash will answer very well, either alone or combined with the tincture of nux vomica, in five or ten drop doses."—Glasgow Medical Journal, Oct. 1856. See abstract of paper in Amer. Jour. of Medical Sciences, Jan. 1857, p. 215.


dissolving azotized food, and demonstrated that the pancreatic juice in disintegrating albumenoid elements, effects in them a transformation identical or analogous to that which the stomach produces.

The pancreatic juice acts only on those portions of the food which have escaped the action of the gastric juice, and at the same time it has no effect upon the digested products of the stomach.

When separated, the pancreatic and gastric fluids exercise their functions in full, and when mingled in their pure state, the two digestions are arrested. The two ferments, pepsine and pancreatine, destroy each other.

In the alimentary canal, this is prevented. 1st, by the pylor-ous which separates the two ferments. 2nd, by the gastric digestion during which the pepsine is destroyed. 3rd, by the bile which destroys in its course the activity of the pancreatine.

It is evident, therefore, that the pancreatine, or the pancreatic juice, so far from assisting digestion, would retard it. M. S. Corvisart states that he had failed to receive any benefit from the administration of pancreatine for the relief of derangement of the digestion in the intestinal canal.

In this case of diabetes mellitus, I employed a preparation of the pancreas of the pig, prepared in the same manner with the stomach. No beneficial results were produced, and it was abandoned and the pepsine retained.

(2.) To afford the organic and inorganic materials of structure.

As usual in the treatment of diabetes mellitus, the patient was furnished principally with animal food—eggs, mutton, beef, &c. Bread and rice were allowed more frequently, however, than in the practice laid down in the books.

℞ Phospate of Iron, . . . grs. ĳ.
  " " Lime, . . . " iv.
  " " Soda, . . . " vi.
  " " Potassa, . . " iv.

Mix and administer three times during the day, in the soup containing the pepsine. These salts were given because they form important constituents of the blood corpuscles, muscles and brain, and nervous system.

℞ Cod-liver oil, tablespoonful three times a day.
Cod-liver oil is indicated in the treatment of diabetes mellitus for two reasons:
To supply the fatty matters which have been consumed.
There is a close connection between phthisis and diabetes.
Writers upon this disease state that, in the majority of cases, phthisis makes its appearance before death.

(3.) To strengthen and quiet the nervous system.
The depressed spirits, fretful, peevish temper, impaired memory and intelligence, loss of sexual propensity, and complete exhaustion of nervous power, call for those remedies which will act both as tonics and sedatives to the nervous system.
To accomplish these objects, opium and strychnia should be given simultaneously.

\[ \text{Strychnia, } \ldots \ldots \ldots \text{grs. ij.} \]
\[ \text{Extract of Gentian, } \ldots \ldots \text{" 3ij.} \]
Mix and divide into 100 pills; one pill three times a day, to be gradually increased, according to the strength of the patient and effects upon the nervous system.

Strychnia not only exerts a tonic influence upon the digestive organs, and muscular and nervous systems, but also exerts a direct influence in diminishing the amount of sugar formed.

\[ \text{One grain of opium at bed-time, and one grain in the morning, at 9 o’clock.} \]

Opium quiets the nervous irritability of the patient, and controls the diuretic influence of the sugar in the blood. It checks the excessive discharge, but does not prevent the production of sugar. Nevertheless, its action upon the nervous system renders it one of the most valuable of the secondary means.
As a stimulant and tonic to the digestive organs, \( \frac{3}{ij} \) of brandy were administered, three times a day, in a cup of the officinal infusion of quassia and soda.

Aug. 10th.—Pulse, 74. Temperature of Atmosphere, 88° F.
\[ \text{under Tongue, 98°} \]

Aug. 11th.—Pulse, 78. Temperature of Atmosphere, 81° F.
Respiration, 16, \[ \text{under Tongue, } 99\frac{1}{2}° \]
August 12th.—Slight improvement of digestion. Bowels are not moved so frequently. He is exceedingly weak, and complains of pain in his head and bones.
August 19th.—Complains of great weakness and thirst; is in a profuse perspiration; says that his digestion improves, but his strength does not increase. The brandy causes him to sleep and perspire too freely, and is probably the cause of the increased flow of urine and loss of strength.

The experiments of George Harley, M.D., (26) and M. Bernard, (27) have demonstrated that alcohol, ether, chloroform, methylated spirit, and ammonia, introduced into the duodenum, or injected directly into the portal vein, will excite an increased secretion of sugar. Healthy animals thus operated on were rendered for a time diabetic. This fact is important, not only in the treatment, but also in its bearing upon the causes of diabetes mellitus.

Drunkards are said to be peculiarly liable to this disease.

Pulse 84, Respiration 17, Temperature of Atmosphere, 90° F. " under Tongue, 104°

The acceleration of the pulse may be due to the action of the alcoholic stimulants. We will discontinue the brandy and substitute 10 grains of carbonate of ammonia, three times a day, in a cup of the infusion of quassia and soda.

The carbonate of ammonia is administered, first, as a stimulant, and second, as a means of diminishing the amount of grape sugar.

Some chemists (28) have supposed that the occurrence of alkaline carbonates is necessary for the decomposition of sugar in the animal economy, and that in diabetes the passage of glucose into the urine is due to a want of alkalinity in the blood.

(26) "Contributions to the Physiology of Saccharine Urine. On the Origin and Destruction of Sugar in the Animal Economy, by George Harley, M.D."


(28) Chimie applique a la Physiologie et a la Therapeutique, Par M. le Docteur Mialhe, Pharmacien de l'Empereur.—Paris, 1856.

In this work, Mialhe, after examining the various hypotheses which have been proposed to explain the nature of diabetes mellitus, comes to the conclusion that its true cause is a deficiency of alkali in the blood. To the objection that the blood of diabetic patients is never either neutral or acid, but always alkaline in its reaction, Mialhe answers that it is difficult to determine the amount of the alkalinity of the blood; and again, that part of the alkaline reaction of this fluid is derived from the presence of alkaline phosphates which possess no power of decomposing glucose. He is inclined to consider that the alkaline carbonates are deficient or absent, the phosphates remaining intact, thus preventing the fluid from exhibiting anything but an alkaline reaction.

In the treatment of diabetes he acts strictly upon these indications, and pre-
Direct experiment does not support this theory, for the researches of C. G. Lehmann, (29) Bouchardat and Bernard, (30) have proved on the contrary, that the blood of diabetic persons preserves its alkalinity, and that the alkalies of the blood do not promote the oxidation of sugar to the extent asserted.

Direct experiment and clinical facts, on the other hand, have shown that, in certain derangements of the nervous and circulatory systems and of the constituents of the blood, the production of grape sugar is increased and it passes into the urine; and farther, that the alkaline carbonates diminish the proportion of sugar in the urine of diabetic patients.

We may then employ the alkaline carbonates in the treatment of diabetes mellitus, although their action upon glucose in the animal economy is not well understood, and probably differs both in degree and kind from that asserted by Mialhe.

August 20th.—Feels very weak, and complains of a pain in the region of his liver. Bowels are still irregular, but improving.

Pulse, . . . 72. Temperature of Atmosphere, 83° F.
Respiration, 14. " Hand, . . . 97°
" under Tongue, 100½°

August 26th.—Improving in strength and spirits. Digestive function restored. Slowly gains flesh. Digests large quantities of meat with ease.

B. Cane sugar 3 xij. during the 24 hours.

scribes lime water, magnesia, vichey water, bicarbonate of soda, alkaline and vapor baths, flannel, friction, exercise, animal diet, and sometimes sudorifics. M. Mialhe relates the case of an Italian professor of music, afflicted with diabetes mellitus. Under the alkaline treatment the sugar rapidly diminished and the patient recovered.

(29) Prof. C. G. Lehmann injected a solution of grape sugar, prepared from starch, into the veins of 37 dogs and rabbits, and in every instance grape sugar appeared in the urine; and the reaction of the urine was acid. The sugar passed so rapidly into the urine, that it was frequently detected five minutes after its injection, and then when only 0.1 of a gramme was injected.

Caustic, alkalies, and their carbonates, associated with grape sugar, were also injected into the veins of rabbits.

Notwithstanding the caustic, alkalies and the carbonates, the urine not only contained grape sugar, but also exhibited an acid reaction.

Prof. Lehmann also injected dilute solutions of tartaric and citric acids into the stomachs of rabbits and dogs, fed on food poor in alkalies. Although the blood was thus rendered poor in alkalies, while at the same time vegetable acids were introduced, still not a trace of sugar appeared in the urine.—Physiological Chemistry, by Prof. C. G. Lehmann. English Ed., vol. iii., p. 233. American Ed., vol. ii., p. 357.

These experiments have been repeated by Uhle, with similar results.—Dis. Ins., Leipzig, Med. Lips., 1852. p. 19.

Hoppe's (31) Investigations upon the action of cane sugar upon the animal economy have established the following facts:

1. No trace of grape sugar was found in the urine or feces during continued feeding with cane sugar.
2. When sugar and meat were given together, the weight of the animal increased much more rapidly than when meat alone was given.
3. When sugar and meat were consumed, urea was excreted in smaller quantity than when meat alone was taken.
4. By exclusive sugar diet, the excretion of urea was depressed to its lowest amount.
5. By the presence of much sugar in the blood, the albuminous substances are preserved from oxidization.

The albumen thus stored up appears to be decomposed during the development of fat. In this manner sugar produces fattening, only when, at the same time, albuminous substances are liberally supplied.

6. The temperature of the body was not increased, by the addition of sugar to the allowance of meat.
7. The health of the animals experimented on, was in no way injured by feeding on large quantities of cane sugar, in addition to a liberal supply of meat.

September 23rd. Has continued steadily to improve in health and strength, and is now able to walk about the hospital grounds and assist in nursing the patients.

The amount of urine voided daily has diminished.

October 20th. His muscular and nervous forces have increased greatly. His face and limbs have filled out. His spirits are excellent; and he says that he is now as fleshy as in health.

He is able to act as assistant nurse, and often sits up all night with those patients who require his services.

The amount of urine excreted daily has greatly diminished, and ranges from seventy to ninety fluid ounces.

The grape sugar has diminished greatly in amount, but has not entirely disappeared.

At this date I resigned the charge of the Savannah Marine Hospital and Poor House.

It is evident, that sufficient time had not elapsed to warrant the assertion that this case was cured; nevertheless, the remedies used produced decided beneficial effects, and were the means, in Providence, of arresting the disease, when the patient appeared to be in the last stages of diabetes mellitus, and upon the borders of the grave.

I have endeavored to give a simple statement of the facts observed in this case, the plan of treatment pursued, and the reasons which led me to the adoption of this mode of treatment.

Although this is but a single case, the treatment of which was not even conducted to its termination in complete health, or death, still, I am persuaded that, in the present state of Medical Science, every successful effort to arrest so formidable a disease as Diabetes, even for a few months, will be considered worthy of an examination by Practitioners of Medicine.

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ARTICLE XIII.

A New Principle of Diagnosis in Dislocations of the Shoulder-joint.

By L. A. Dugas, M. D., Professor of Surgery, in the Medical College of Georgia.*

Having for a number of years inculcated in my lectures the principles contained in this paper, I was requested to reduce my views to writing, for the benefit of our classes, and accordingly published an article on the subject in the March number, for 1856, of the Southern Medical and Surgical Journal, p. 131. The object of this communication is to present the American Medical Association with a brief exposé of this interesting subject, and to accompany my remarks with pictorial illustrations, calculated to impress the eye as well as the understanding of the reader.

The principle of diagnosis to which I refer may be enunciated in the following language: If the fingers of the injured limb can be placed by the patient or by the surgeon upon the sound shoulder, while the elbow touches the thorax, there can be no dislocation; and if this cannot be done, there must be a dislocation. In other words, it is physically impossible to bring the elbow in

* The above Report was read before the American Medical Association, and printed in the 10th Volume of the Transactions.
contact with the sternum or front of the thorax if there be a dislocation; and the inability to do this is *proof positive* of the existence of dislocation, inasmuch as no other injury of the shoulder-joint can induce this inability.

In order to make these propositions apparent, I beg leave to present drawings taken from the skeleton, showing the relative position of the bones in the natural state, and in the several dislocations of the shoulder. The evidence thus obtained in support of my principle, would be still stronger if the bones were invested with their normal coverings and attachments.

Let us then look at Fig. 1, and we may observe, that while the head of the humerus occupies the glenoid cavity, and the fingers rest upon the other shoulder, the elbow and lower end of the humerus lie upon the thorax without difficulty, because of the circumstance that the head of the humerus, when in its natural position, is removed several inches from the ribs. In consequence of the rotundity of the thoracic walls it is physically impossible that both ends of the humerus should at the same time come in contact with the chest. We see, therefore, in Fig. 1, that in the absence of any dislocation, the *upper half* of the bone does not touch the thorax, and that the *lower half* does so without the least difficulty.
By now referring to Fig. 2, which represents a dislocation into the axilla, we find that, the fingers being placed upon the opposite shoulder, the elbow is forced so far forwards that it cannot touch the thorax. In this state of things, the upper end of the humerus alone touches the ribs, while the lower end is proportionately removed from the chest. Any attempt to force the elbow against the thorax must be fruitless, unless at the expense of a disruption of all the soft parts by which the head of the humerus is held down; for, as I have already stated, it is physically impossible for both ends of the humerus to touch the thoracic walls at the same time.

We have represented, in Fig. 3, a dislocation forwards or below the clavicle; and here again we find the upper end of the humerus resting upon the ribs—the elbow being consequently removed from the chest. The upper half of the humerus touches the thorax, and so long as this is the case, it is physically impossible for the lower portion of the humerus also to do it. In dislocations of this kind, it is very difficult to carry the fingers upon the opposite shoulder, even though the elbow be allowed to project forward, because of the resistance offered by the strong muscles which pull back the humerus. I have, however, represented the bones of the skeleton in this position, for the purpose of
showing the effect, in case it could be assumed, in the living subject.

Fig. 3.

Dislocations of the humerus upon the dorsum of the scapula, although very rare, should still be carefully studied. I have, therefore, represented this accident in Fig. 4, by which it may be seen that the same principles are applicable also to it. Here,
as well as in the other instances, it is only the upper end of the humerus that touches the thorax, and the elbow projects strongly forwards. In this dislocation, it might be possible to bring the elbow against the side of the trunk, by carrying the humerus down parallel with the axis of the body; but any contact of the elbow with the chest is impossible, if the fingers be directed towards, or placed upon the sound shoulder, for then the form of the thorax would offer an insuperable obstacle.

Having now, I trust, sufficiently demonstrated the truth of the proposition that it is physically impossible to bring the elbow against the front of the thorax in dislocation of the shoulder, I would simply add, that it is equally true, that no other injury of the shoulder-joint than a dislocation can induce this physical impossibility. It is obvious, that a mere contusion of the soft parts may render motion of the joints so painful as to deter the patient from the effort necessary to carry the fingers upon the other shoulder. But there can be no difficulty on the part of the surgeon in placing the limb in this position, and an anaesthetic might be used, if desirable, so as to render manipulation painless. The same may be said of fractures of the upper end of the humerus, of the acromion, of the coracoid process, and of the neck of the scapula. In neither of these accidents can there be any physical impediment in the way of bringing the elbow in contact with the front of the chest, for in neither of them can the upper end of the humerus be so fixed against the ribs as to make it impossible for the lower end to touch the chest. Nothing, therefore, but a dislocation can prevent the limb from being placed in the position indicated.

If it be justly esteemed a matter of great importance to be in possession of correct principles of diagnosis in occult diseases, it is certainly not the less so with regard to surgical accidents, especially when these demand prompt interference. Our professional records unfortunately establish too conclusively the imperfection of our diagnostic resources in injuries of the joints, to permit any indifference on the subject. If, therefore, the views here presented may facilitate, in the least degree, the detection of injuries confessedly more or less obscure, my object will have been attained.
Supra-renal Capsules and Bronzed Skin. By George Harley, M. D., F. R. C. S. London.

[The following condensed analysis of the above paper published in the British and Foreign Med. Chir. Review, presents a comprehensive resumé of the various opinions and experimental results upon the subject. It is by Dr. Austin Flint, Jr., and is transferred from the Buffalo Journal.—Edts.]

The Supra-Renal Capsules. By Austin Flint, Jr.—Medical practitioners have always occasionally met with a disease affecting the color of the skin and accompanied by extreme emaciation, of the pathology of which they were utterly ignorant. We ourselves had an opportunity of seeing such a case in the wards of Prof. Flint, at the Buffalo Hospital of the Sisters of Charity. In this case, as far as our memory serves us, the patient was exceedingly emaciated; had cough and extensive pulmonary disease, and was affected with a brown discoloration of the skin, which was general, with the exception of spots over the body of dazzling whiteness, which were of irregular shape, and varied in size from that of a sixpence to a dollar, or in a few places were even larger. The patient died a few days after his admission into the wards, but no autopsy was made.

A short time after this, we saw a notice of a monograph by Dr. Addison, on "The supra-renal capsules and their connection with Bronzed Skin." Dr. Addison has made a number of post-mortem examinations of patients who where affected with this peculiar discoloration of the integument, which he denominated "Bronzed Skin," and invariably found associated with it a disease or disorganization of the supra-renal capsules, by which their function was entirely abolished. As Addison was the first to point out any connection between bronzed skin and disease of these organs, it has been proposed that the disease shall be called "Addison's Disease," as albuminuria connected with organic diseases of the kidneys was named after its distinguished discoverer, Dr. Bright. Physiologists, as is well known, have never been able to determine definitely the function of the ductless glands or the blood glands, as they are sometimes called; which are the spleen, thymoid and thymus glands, mesenteric glands and the supra-renal capsules. These organs have all the anatomical characteristics of ordinary glands, with the exception of ducts; and, as owing to this, their secretion, if they have any, cannot be subjected to analysis, their rôle in the economy has remained almost unknown. In none of these, however, has the obscurity been so great as in the case of the supra-renal capsules. The brilliant experiments of Bernard in regard to the Glucogenic function of the liver,
which so surprised and delighted the scientific world, and which made such an advance into the pathology of that hitherto unaccountable disease, diabetes mellitus; gave a new impulse to the study of the ductless or blood glands; as by these experiments Bernard has shown that the liver, in addition to its office as a bile secreting organ, formed sugar within its substance, which was given up immediately to the mass of blood without the intervention of an excretory duct: since this was discovered, it has been shown that the liver also produces fat de novo, though as much is not known about this function as about the production of sugar. Thus the liver, in addition to being an ordinary gland, possessed of an excretory duct, is in reality a blood gland like the spleen, or supra-renal capsules.

A great proportion of the energy of the investigations into the functions of the ductless glands has been directed towards the spleen, and it is now supposed, and on pretty good foundation, that the spleen and mesenteric glands have an important office in the formation of blood globules. The physiology of the supra-renal capsules, however, had still remained buried in its original obscurity.

Upon the appearance of the excellent monograph by Dr. Addison, observers in all parts of the world set themselves to work upon the physiology of the supra-renal capsules; the paper of Addison having thrown some light on the subject, and seeming indeed to establish some connexion between these organs and the formation of pigment, or the regulation of its deposition. The Physiologists who have made known to the world the results of their experiments, are Gratiolet, Brown Séquard, Philippeaux, and Dr. Harley, of University College, London. The experiments of these gentlemen, whose names our readers will recognise as belonging to men eminent in this department, have led them to somewhat different results: we had the pleasure of listening to lectures by Dr. Brown Séquard on this subject a year ago, when he seemed to prove that the supra-renal capsules were essential in the highest degree to life, even more so than the kidneys themselves; as an animal survived for two or three days after the extirpation of the kidneys, but it lived for a few hours only after the removal of the supra-renal capsules. Brown Séquard also showed that animals from whom these organs had been removed, were convulsed and affected with that peculiar nervous phenomenon which is known as “turning,” this turning always being in the same direction. He also asserts that death supervenes too rapidly to be due to inflammation of the peritoneum, and indeed, on examining this membrane after death, no evidences of inflammation are observed. Brown Séquard performed experiments in the presence of his audience, and we had an opportunity of witnessing the phenomena which he described.

The most elaborate and satisfactory paper on this subject which
we have yet seen, is from the pen of Dr. Harley, and appeared in the last number of the British and Foreign Medico-Chirurgical Review. This article we have carefully perused, and it was this which led us to make the preceding observations. Thinking this subject to be of great importance to us as Physiologists and Pathologists, we have been thus extended in our remarks, and will give a brief recapitulation of the more important results at which Dr. Harley has arrived; this we deem the more appropriate, as it is probable that many of our readers do not have an opportunity of seeing the above mentioned periodical.

In anatomical structure, these organs present no very striking points of difference from some of the ordinary secreting glands of the economy; they are formed of a medullary and cortical substance like the kidneys. There is a peculiarity however in their chemical constitution. "In the beginning of the last year, M. Vulpian communicated to the Société de Biologie the discovery a very peculiar reaction possessed by the super-renal capsules of vertebrated animals. He found that an aqueous solution of iodine brought in contact with the medullary substance gave rise to a beautiful rose color. And further, that the greater portion of oxidizing agents acted like the iodine solution, although in a minor degree. Even the oxygen of the air, under the influence of light, produced the same effect. I have repeated M. Vulpian's experiment on the medullary substance of the supra-renal capsules of sheep with success; but am equally at a loss with the author to form an opinion as to the nature of the substance which possesses the strange property alluded to. We as yet know so little regarding the nature of color and coloring matter, that it would be futile to attempt to draw any conclusions with regard to the import of the rose colored reaction above spoken of."

"Not being able to separate the coloring matter, M. Vulpian, in concert with M. Cloez, proceeded to extract the "immediate principles" of the supra-renal bodies; and these gentlemen have recently communicated to the Institute de France as the result of their united labors, the discovery of hip-puric and tanrocholic acids in the supra-renal capsules of herbiverous animals. But as these substances have been abundantly found in different parts of the animal body, their discovery in the latter organs, although interesting, unfortunately throws no light upon the nature of their functions."

Dr. Harley has since seen a communication from Prof. Virchow, in which he confirms the observation of M. Vulpian with regard to the rose colored reaction, and also mentions that he has found senecine in the medullary substance.

The question arises whether the supra-renal capsules are organs peculiarly essential to foetal existence and development. It was formerly supposed that this was the case, and the argu-
ments in favor of this idea, were the great relative size of these bodies in the fœtus, and their small size in adults. Meckel states that at the third month, the supra-renal capsules and kidneys are of equal size, at the sixth month as 2 to 5, at birth as 1 to 8, and in adult life as 1 to 28. Later observations, however, by the author, Brown Séquard, and others, show a different result in the case of some of the mammalia. Dr. Harley has been confined in his observations to the cat, having examined thirteen fœtal and six adult capsules. Without giving the figures and calculations, we will give the results at which Dr. Harley has arrived and in which he confirms Ecker, Frey, and others: "The weight of the supra-renal capsule in the kitten at birth is to that of the kidney as 1 to 57.3; and in the adult as 1 to 54.8. But as so few adult capsules and kidneys were employed, it may be perhaps better to take the average of the whole six that were examined, which would then give us the relative weight of three organs in the full grown animal as 1 to 46.49."

"We shall find by a very simple calculation that the kidney was after birth increased 12.35 times in weight, while the supra-renal capsule at the same time has increased 14.87 times in weight. What conclusion are we to draw from this fact? We here see that the supra-renal capsules increase in size, as age advances, at a greater rate than the kidneys. I must here speak with caution however. Small statistics are dangerous data to draw conclusions from, and perhaps a larger number of observations might furnish us with different results."

Thus our readers will see that Ecker, Frey, and Brown Séquard, whose observations are here confirmed by Harley, have developed an exceedingly important fact in relation to the probable comparative activity of the function of the supra-renal capsule, whatever it may be, in fœtal and adult life: correcting the doctrines promulgated by Meckel, that these organs in the mammalia diminish after birth, both in relative size and activity of function.

We now come to experiments, bearing directly on the function of the supra-renal capsules. The first experiment was on an adult cat, from which the right capsule was removed. The animal survived nine days after the operation, and on post mortem examination, no cause of death could be discovered.

Another experiment was made on a white cat, from which the capsules were removed. This died in twenty-four hours, and on examination there were found all the indications of peritonitis.

Another experiment was made on a small white coach dog, from which the left capsule was removed. It died on the twelfth day, and on examination, signs of peritonitis were discovered.

An experiment was then made on two Guinea pigs, in one of which the abdomen was opened, and the amount of injury which the parts would suffer by the removal of the supra-renal
capsules, was inflicted, the wound sewed up, and the capsules allowed to remain; the fellow, which was of the same age, sex, and development, was then deprived of the capsule on the corresponding side. Both these animals died within twenty-four hours after the operation. The same experiment was then repeated on two cats. The cat from which the supra-renal capsule (the right) was removed, lived two days; the other died during the third night. In the abdomens of both, signs of peritonitis were distinctly visible.

The next experiment was made on a bull terrier dog, by removing one of the capsules without applying a ligature to the vessels, the body being enucleated with the fingers. The dog remained in the author's possession for five months, and did not suffer from a day's illness.

The next experiment was of exceeding interest: it was on a large tom cat, in which, on opening the abdomen, the right capsule was rough and hard as a stone: it was enucleated with the greatest facility. The same operation was repeated on the other side with a similar result. On making a section of the capsules, it was found that a considerable portion of the medullary, as well as of the cortical substance, had become replaced by a calcareous deposit, consisting chiefly of carbonate of lime. The remaining portion of the gland contained so much fibrous tissue, that the normal structure might be said to have entirely disappeared. As the operation on this animal had been performed with the utmost facility, and there had been no haemorrhage, or any apparent injury done to the surrounding parts, except the tearing through the vessels and nerves, the author felt sanguine of success. His astonishment was great therefore when, arriving at the college next morning, he found the cat dead. The post mortem examination revealed nothing, though the blood was searched for signs of phlebitis, examined for crystals, and for the flakes of pigment described by Brown Séquard. As it has been found by Ludwig and Haffner, that section of the splanchnic nerves will kill animals in one or two days, and according to Brown Séquard, mere pricking or cutting of the semi-lunar ganglion proves fatal to rabbits in thirty hours, while division of the sympathetic in the neighborhood of the kidneys causes death in twenty-three hours: in absence of other proof of death, it is probable that it resulted from injury done, in tearing out the capsules, to the ganglionic system of nerves.

The extirpation of the right is more fatal than the removal of the left capsule, as it proved by experiments which the author has cited, but which it is unnecessary for us to state. M. Gratiolet thought that this fact was to be explained by the proximity of the liver, and the occurrence of hepatitis; at first Dr. Harley was of this opinion, but he now very justly concludes that it is due to
another cause. The right semi-lunar ganglion, which is much larger than the left, lies (in the dog and cat) directly beneath the supra-renal capsule; while the smaller left semi-lunar ganglion is placed on the left crus of the diaphragm, and internal to the supra-renal body. Thus it will be immediately seen that a removal of the right capsule will do more mischief to this ganglion, and this injury has been shown by Ludwig, Hasler and Brown Séquard to be sufficient to produce death in a short time.

As it is generally the case in the removal of double organs, that if one be left it becomes hypertrophied from being compelled to perform a double function. Dr. Harley was anxious to observe if this was the case as respects the supra-renal capsules. He accordingly removed the right capsule from a cat, which had made an excellent recovery from the operation of removing the left about a month before. Nothing unusual, however, was observed: on the morning of the third day it died, and on opening the abdomen, two of the lumbar lymphatic glands were observed very much enlarged, and presenting a peculiarly beautiful, semi-transparent, lobular appearance.

Dr. Harley performed another experiment on a piebald rat, with reference to the same point. The right supra-renal capsule was removed, and the animal made a rapid recovery, being in excellent condition at the end of six weeks. The left capsule was then removed, and compared with others taken from animals of the same species and age, in order to ascertain if it had become hypertrophied. But in this, as in the case of the cat, there was no very marked difference in either its size or appearance. From the effects of the latter operation the animal speedily recovered, and ultimately became very fat and healthy looking.

An experiment was made on a white rat, in order to observe if any change would take place in the color of the hair and skin. Both capsules were removed at an interval of nine days. The animal lived sixteen days after the last operation, and during that time the color of the hair and skin was carefully watched, without discovering any alteration, excepting that the neck became denuded of hair, was covered with a luxuriant crop of young hair, about an eighth of an inch long.

The foregoing experiments, which we have presented in as condensed a form as was consistent, cannot fail to strike every one as extremely interesting, and leading to some very important conclusions. Brown Séquard has maintained that it is impossible for an animal to live for more than forty-eight hours at the farthest, after it has been deprived of its supra-renal capsules. The experiment of Dr. Harley fully controvert this statement, and in addition, M. Philipeaux, of Paris, has removed the spleen, supra-renal capsules, and the thyroid body from the same animal,
which afterwards recovered. Dr. Harley brought with him from Paris a young rat, the offspring of a mother which had been deprived of spleen and supra-renal capsules. Brown Séquard is also probably in the wrong in supposing that the convulsions and turning which followed his experiments, were due to the removal of the supra-renal capsules; as Dr. Harley has not observed it in his experiments, and is confirmed by a private letter from Professor Virchow, who has also failed to notice this phenomenon.

We had the pleasure, from the politeness of Dr. Brown Séquard, of examining certain microscopic crystals, which he invariably found in the blood of animals from which he had removed the supra-renal capsules. These crystals were unlike the ordinary blood crystals, being pale and needle shaped. Dr. Harley makes no allusion to this occurrence.

Finally we present the conclusions drawn by Dr. Harley from the results of his experiments.

1st. The supra-renal capsules are not solely fetal organs.
2d. The supra-renal capsules are not absolutely essential to life.
3d. The removal of the right is generally more fatal than removal of the left capsule.
4th. That convulsions do not necessarily follow the removal of the capsule.
5th. That the absence of this function (in rats), is attended neither by great emaciation nor debility.
6th. That when death follows upon the extirpation of the supra-renal bodies, it is in most cases in consequence of the injury done to the neighboring tissues; perhaps most frequently the mutilation of the ganglionic system of nerves.
7th. Absence of the function of the supra-renal bodies, is not proved to have any special effect in arresting the transformation of hæmatin, or in increasing the formation of blood crystals.
8th. The suppression of the supra-renal capsular function is not attended by any increased deposit of pigment in the skin in its appendages (in rats).
9th. The problem of the connection of bronzed skin and supra-renal capsular disease is more likely to be solved in the dead house than in the physiological laboratory.

To what Degree are the Intellectual Faculties affected in cases of Apoplexy and Hemiplegia? By Benjamin W. M'Creeedy, M. D., Physician to Bellevue Hospital.

This inquiry, irrespective of its medico-legal relations, is of interest and importance to the medical practitioner. Dr. M'Creeedy brings to bear upon it the results of an analysis of
cases collected from different authors, as well as instances falling under his own observation, and communicated to him by medical friends. From an examination of "a collection of cases of apoplexy," by Mr. Copeman, of London, published in 1845, he arrived at the following conclusions: "In all, out of a record of two hundred and fifty cases, fifty cases have been taken in which the patient had recovered from the first effects produced by the apoplectic stroke. They are all the cases contained in the book in which such recovery had taken place, and in which the cases were clearly of an apoplectic character. Yet in no one of the cases is there the slightest indication that the patient was left with a mind, I will not say reduced to a state of imbecility, but impaired in any marked degree. They all as far as the mind is concerned, with the exceptions to be mentioned, recovered; recovered perfectly; were restored to their usual state; returned to their previous occupations. In two instances the faculty of speech was either deranged or lost, and in those instances their physicians assert that the faculty of language, not reason, was deranged. In the third instance the patient is stated to have recovered with an impaired memory, and with some confusion of thought; but a merchant, seventy-three years of age, who after partial recovery from a severe apoplectic seizure, is enabled to labor for his support by writing for the weekly papers, may be esteemed to have still possessed a fair share of intellect and energy. The second attack left him yet more prostrate, very much weakened in body, and unable to do anything for the support of his family. From the third attack he never recovered; still there is nothing like imbecility: he lies for months in a feverish condition, alternating between coma and delirium, and even a few days before his death he partially recovered and talked in a rational manner with his wife."

The foregoing conclusions are corroborated by the results of an examination of a series of cases contained in Andral's Clinique Médicale, and in the Anatomie Pathologique of Cruveilhier. These cases, like the preceding, are quoted in brief detail by the writer. In expressing the results of this examination, the writer says: "Here then, are sixteen cases in which the condition of the intellect before the attack was obscured, in which the nature of the disease was verified by post-mortem examination—being all that are contained in the Clinique Médicale of Andral, and the Anatomie Pathologique of Cruveilhier, and reported by men whom every one will allow were competent, careful, and conscientious observers—in which the hemorrhage was situated in almost every part of the brain, presenting every degree of severity compatible with the continuance of life, many of them living for years after the occurrence of the apoplectic seizure, and yet in only two of these was there any decided improvement of the mind noticed."
The writer adds: "Perfectly in accordance with this have been the results of my own observations. At Bellevue, the great pauper hospital of the city, there are always a number of hemiplegiacs; but since my attention has been directed to the subject, I have seen no case in which hemiplegia has been the consequence of a well-marked apoplectic seizure, in which I have found the intellect seriously impaired. In some of these cases the first impression of the observer is wholly unfavorable to the intelligence of the patients; the distorted countenance, the impaired speech, and the motionless tears or laughter, give them an appearance of utter imbecility; yet a patient examination will commonly discover an amount of intelligence entirely unexpected." * * * * "From the facts given above, no other conclusions can be drawn than that any impairment of mind, as a direct consequence of apoplexy, after the patient has recovered from its primary effects, must be an exceptional occurrence. That the apoplectic seizure may hasten the approach of senile atrophy of the brain is, as before stated, probable; when atrophy has already commenced, an apoplectic attack may undoubtedly quicken its progress, and, in such a case, the friends of the patient would naturally attribute the rapid decay of the mind wholly to the apoplectic seizure. This, I think, I have myself seen; and as apoplexy becomes more common as life advances, such cases may not be unfrequent. The confusion of mind, the difficulty in pursuing a train of thought, of which apoplexies are apt to complain, is to a great extent the mere result of diminished nervous energy. They comprehend well, and judge correctly, but, before their general health is confirmed, they can no more think continuously than they can take a long walk, or perform any other act demanding a considerable expenditure of nervous force. It is not the brain specially that is affected—it is the system at large. Of all the faculties, memory, either special or general, is most apt to be impaired, and this impairment patients are always ready to admit and complain of. As the patient recovers, the memory commonly improves; and if no new attack supervene, this improvement is progressive for years." * * * "Whence, then, arises the number of imbeciles who are to be found in every almshouse? Partly, doubtless, from the cases already mentioned, in which senile atrophy is prematurely caused, or its progress hastened by the occurrence of apoplexy. And let us recollect the state of isolation and neglect from which such persons frequently, often necessarily, suffer, is in itself a main cause of a weakened intellect: the mind rusts out for want of exercise."

The writer details a series of cases in which, while the hearing remained unaffected, the patient's consciousness entire and no delirium, the faculty of speech was either lost or perverted.
He remarks on these cases as follows:—"Here, it will be seen, are eleven well-marked cases of hemiplegia, three of them complicated with epileptic convulsions, and all of them with loss or perversion of the faculty of speech. Besides the cases here recorded, three more have come to my knowledge the subjects of which, I believe, are still living. This shows conclusively the loss of speech, as an accompaniment of hemiplegia, to be no very rare occurrence. Of the whole fourteen cases, two have perfectly recovered the use of speech; two have recovered it to a partial and limited extent; the others still, I believe, remain speechless. From the cases recorded in the journals to which I have access, I believe that recovery from perversion of the faculty of speech is more common and perfect than when the power of articulation is either wholly lost or confined to a few monosyllables. Direct medication, except in so far as it improves the general health of the patient, seems to have no effect on the lost faculty; more is to be hoped for from careful, long continued, and well-directed exercise of the local organs by the patient himself."

The foregoing conclusions are certainly at variance with the views inculcated by medical writers and commonly held by practitioners. The general belief is, that after an apoplectic seizure, as a rule, the mind is more or less impaired, and in severe cases the patient is apt to fall into a condition of partial or complete imbecility. Epilepsy is also supposed to tend intrinsically to induce deterioration of the mental faculties in proportion to the frequency and severity of the paroxysms. Assuming that the writer's conclusions are correct, it is in a great measure owing to the prevailing error on the subject that the faculties of the mind are in a certain proportion of instances, permanently damaged; and it becomes a very important point in practice to enjoin, under judicious restrictions, that degree of exercise of the mental faculties which shall secure their healthful if not vigorous activity. This practical point is especially applicable to the management in cases of epilepsy. The reviewer has long entertained the opinion that, in this affection, the mental deterioration which is frequently observed is not due so much to an intrinsic tendency of the malady as to the isolation and inactivity incident to it. With reference to epilepsy, the author of the highly interesting paper which we have reviewed, states that he has "repeatedly seen and prescribed for a person who has had epilepsy for thirty-three years, occurring several times in every month, and sometimes eight and ten times a day; in whom, though there is obvious enlargement of one side of the head, and much headache, and the tongue bears the marks of countless lacerations, yet it is impossible to discover in this person the least change in her mental condition." He adds, that "both the medical profession and the judicial bench of the city can each furnish at least
Remarks on the Medicinal Hypophosphites.*

By William Proctor, Jr.

[In our last number, we presented to our readers, a striking article from Dr. Churchill, on the use of the Hypophosphites, in the treatment of Tuberculosis. We here transfer to our pages a paper in which these several salts and their mode of preparation are described.—Edts.]

The recent researches of Dr. Churchill into the therapeutic character and value of the hypophosphites in tuberculosis, some account of which will be found at page 143 of this number, have attracted much attention from physicians, and many inquiries have been made after these salts; and it is believed that a notice of the processes for preparing them, and some formulae for their prescription, will be acceptable to the readers of the Journal, especially, as from their hitherto unimportant position among pharmaceutical chemicals, no mention is made of them in works most accessible. The salts which have been used are those of lime, soda, potassa and ammonia. In the sequel a notice is given of these, of the hypophosphite of sesquioxide of iron, and of hypophosphorus acid.

The hypophosphites, according to Gmelin, are mostly crystalizable. They cannot exist without a certain proportion of water, which is equally true of the acid itself, which in its most concentrated form contains three equivalents of water, one of which is replacable by bases. When heated till decomposed, these salts emit phosphuretted hydrogen. They are permanent in the air as regards oxidation; but when heated in solution, especially if free alkali is present, they are decomposed into phosphates and hydrogen gas. They are nearly all soluble in water, and several of them in alcohol, and readily reduce the soluble salts of silver and gold.

Hypophosphite of Lime is the most important of these salts, as it not only, by oxidation in the economy, will afford phosphate of lime in a nascent state, if needed, but its reaction with the carbonates of the alkalies give a ready means of obtaining the alkaline hypophosphites. When phosphorus is boiled with milk of lime it

*The Hypophosphites are manufactured in quantity by Hennell Stevens, of Philadelphia, who is successfully directing his attention to the supply of new chemicals for medicinal use, and fine chemicals in general.
On the Medicinal Hypophosphites.

gradually disappears, with evolution of spontaneously inflammable phosphuretted hydrogen, which explodes as it reaches the atmosphere with the formation of water and phosphoric acid. When the strong odor of phosphuretted hydrogen ceases to be given off, the liquid contains, besides the excess of lime, nearly half of the phosphorus as phosphate of lime, and the remainder, deducting the considerable portion which has escaped into the air as phosphuretted hydrogen, as hypophosphite of lime. According to Wurtz, more than one equivalent of water is decomposed, and the phosphuretted hydrogen is accompanied by free hydrogen. If this be true, the source of the super oxidation of so much of the phosphorus is traceable to the resulting oxygen; but Rose is of the opinion that this oxygen is derived from the atmospheric air in contact with the boiling liquid. When the process is conducted in a flask, it requires a constant ebullition of the liquid to prevent the explosion consequent upon the entrance of the atmospheric air. To avoid this result, it has been found safer to employ a deep, open vessel. The constant evolution of gas and vapor, which keeps a froth on the surface, excludes the atmosphere in a great degree, so that the yield is not much diminished, whilst the safety and easiness of the process is greatly increased. The process should be conducted under a hood with a strong draught, or in the open air, to avoid the disagreeable fumes which are evolved.

Take of Lime recently burned - - - - - 4 lbs. av.
Phosphorus - - - - - 1 lb. "
Water, - - - - - - 5 gals.

Slake the lime with a gallon of water, put the remainder in a deep boiler, and as soon as it boils add the slaked lime, and mix to a uniform milk. The phosphorus is now added, and the boiling is kept up constantly, adding hot water from time to time, so as to preserve the measure as nearly as may be, until it is all oxidized and combined, and the strong odor of the gas has disappeared. The mixture froths much, and little of the phosphorus reaches the surface. Then filter the solution through close muslin, wash out that portion retained by the calcareous residue with water, and evaporate the filtrate till reduced to six pints. The concentrated liquor should now be re-filtered to remove a portion of carbonate of lime which has resulted from the action of the air on the lime in solution, and again evaporated till a pellicle forms, when it may be crystalized by standing in the drying room, or the heat may be continued with stirring till the salt granulates, when it should be introduced into bottles.

Hypophosphite of lime is a white salt with a pearly margaritenlike lustre, and crystalizes in flattened prisms. Its composition, according to Wurtz, is \( \text{CaO}_2\cdot\text{H}_2\text{PO}_3 \), the water being essential to the salt. It is soluble in six parts of cold water, and in not
much less of boiling water; it is soluble slightly in diluted alcohol, but insoluble in alcohol sp. gr. .835.

_Hypophosphate of Soda_ is prepared by double decomposition between hypophosphate of lime and crystalized carbonate of soda.

Take of Hypophosphate of lime - - - - - 6 oz.
Crystalized carbonate of soda - - - 10 "
Water, a sufficient quantity.

Dissolve the hypophosphate in four pints of water, and the carbonate in a pint and a half, mix the solutions, pour the mixture on a filter, and lixiviate the precipitate of carbonate of lime, after draining, with water, till the filtrate measures six pints. Evaporate this liquid carefully till a pellicle forms, and then stir constantly, continuing the heat till it granulates. In this state the salt is pure enough for medical use; but if desired in crystals, treat the granulated salt with alcohol sp. gr. .835, evaporate the solution till syrupy, and set it by in a warm place to crystalize.

Hypophosphate of soda crystalizes in rectangular tables with a pearly lustre, is quite soluble in water and in ordinary alcohol, and deliquesces when exposed to the air. Its composition is NO

\[\text{Hypophosphate of Potassa}\] is prepared by the same process as that given above for the soda salt, substituting \(\frac{5}{4}\) ounces of granulated carbonate of potassa, in place of 10 ounces of crystalized carbonate of soda, and using half a pint instead of a pint and a half of water to dissolve it.

Hypophosphate of potassa is a white, opaque, deliquescent salt, very soluble in water and alcohol. Its greater tendency to absorb moisture renders it less eligible for prescription than the soda salt. Its composition is KO

\[\text{Hypophosphate of Ammonia}\] is prepared from hypophosphate of lime and sulphate or carbonate of ammonia.

Take of Hypophosphate of lime - - - - - 6 oz.
Sesqui-carbonate of ammonia (translucent) 7.23 oz.
Water, a sufficient quantity.

Dissolve the lime salt in four pints of water, and the ammonia salt in two pints of water, mix the solutions, drain the resulting carbonate of lime, and wash out the retained solution with water. The filtrate should then be evaporated carefully to dryness, then dissolved in alcohol, filtered, evaporated and crystalized.

This salt is deliquescent in the air, very soluble in alcohol and water, and when carefully heated evolves ammonia, and leaveshydrated hypophosphorus acid. The composition of this salt is

\[\text{Hypophosphate of Sesquioxide of Iron}\]—This salt may be obtained in the form of a white gelatinous hydrate, by precipitating a solution of hypophosphate of soda or ammonia with one of sesquisulphate of iron. The precipitate should be well washed with
water and dried at a moderate temperature. It is necessary to avoid using a hypophosphite containing any alkaline carbonate or the precipitate will be contaminated with free sesquioxide. Thus prepared, this salt is a white, amorphous, tasteless powder, like the pyrophosphate, soluble in hydrochloric acid, and in free hypophosphorus acid.

Hypophosphorus Acid.—So far as we are aware, this acid has not been employed, in a free state, by Dr. Churchill, but it is highly probable that it may come into use, should the favorable results claimed for its salts be substantiated by new observations. Any claims which phosphoric acid may possess as an agent to supply the waste of phosphorus and phosphates in the human economy, will be more than equalled by this acid. Hypophosphate of baryta is the salt which is most eligible for the preparation of this acid, but it is more convenient to prepare it from the lime salts viz:—

Take of Hypophosphate of lime — — — 480 grains.
Crystalized Oxalic acid — — — 350 grains.
Distilled water — — — — — — — 9 fluid oz.

Dissolve the hypophosphate of lime in six ounces of the water and the acid in the remainder, with the aid of heat, mix the solutions, pour the mixture on a white paper filter, and when the liquid has passed add distilled water carefully, till it measures ten fluid ounces, and evaporate this to $\frac{8}{3}$ fluid ounces.

The solution thus prepared contains about ten per cent. of terhydrated hypophosphorus acid ($\text{HO}-|\text{-2HO,PO}$) a teaspoonful representing 6 grains of the acid, which contains $2\frac{1}{4}$ grains of phosphorus. The dose of this acid solution will probably vary from ten minims to a teaspoonful.

It is proposed to give several forms in which the hypophosphites may be conveniently administered, and a few hints to the physician in reference to prescribing them.

The soluble salts of mercury and silver are reduced by contact with the hypophosphites. All soluble sulphates and carbonates are incompatible with the lime salt, and should not be associated with it in prescriptions, if phosphate of lime is indicated in the case. The iron salt when dissolved by excess of acid is colored black by gallotannic acid and drugs containing it, but is not blackened by the tannin of cinchona, catechu and krameria; hence any preparation containing it may be associated with Peruvian bark. The hypophosphites of soda, potassa and ammonia, are more or less deliquescent, and when prescribed in powder it should be with proper precautions to avoid moisture, as by association with a considerable excess of sugar of milk. The lime salt may be mixed with either this sugar or ordinary sugar. None of these salts are soluble in cod-liver oil; and if given with it, they should be dissolved in syrup, and mixed by agitation. Where
lactin and glycerin are indicated in the treatment of phthisis or dyspepsia, any of these salts may be very elegantly associated in the form of syrup.

_Syrup of Hypophosphite of Lime._

Take of Hypophosphite of lime, an ounce.
Water, nine and a half fluid ounces.
White sugar, twelve ounces.
Fluid extract of vanilla, half a fluid ounce.

Dissolve the salts in the water, filter, add the sugar, dissolve by aid of heat and add the vanilla. The dose is from a tea-spoonful (3½ grs.) to a table-spoonful (14.) according to the circumstances of the case, three times a day.

_Comound Syrup of Hypophosphite._—The following formula has been made in view of the double purpose to which these salts are directed by Dr. Churchill, viz: the increase of nerve force, and the elevation of the tone of the several functions concerned in alimentation and nutrition; and will afford an agreeable means of testing practically their merit. The iron salt is presented in a form well adapted for entering the circulation, whilst the acid, besides exerting its solvent power, adds to the agreeable taste of the preparation.

Take of Hypophosphite of lime, 256 grains.
Hypophosphite of soda, 192 "
Hypophosphite of potassa, 128 "
Hypophosphite of iron* (recently precipitated) 96 "
Hypophosphorus acid solution, q. s. or 240 "
White sugar, 12 ounces.
Extract of vanilla, ½ ounce.
Water, a sufficient quantity.

Dissolve the salts of lime, soda and potassa in six ounces of water; put the iron salt in a mortar, and gradually add solution of hypophosphorus acid till it is dissolved; to this add the solution of the other salts, after it has been rendered slightly acidulous with the same acid, and then water, till the whole measures 9 fluid ounces. Dissolve in this the sugar, with heat, and flavor with the vanilla. Without flavoring, this syrup is not unpleasant, being slightly saline, and not at all furruginous. Any other flavoring may be used, as orange peel, orange flower or ginger. It is also suggested to physicians that glycerine may be used, wholly or partially, in sugar when indicated, six ounces and a half of glycerine being substituted for twelve ounces of sugar. The object of acidulating the saline solution is to decompose any alkaline

*This quantity 96 grains of hypophosphite of iron is obtained when 123 grains of hypophosphite of soda dissolved in 2 ounces of water is decomposed with a slight excess of solution of persulphate of iron, and the white precipitate will wash on a filter with water.
carbonates which may be present, and which have been noticed by the writer in some of the commercial soda salt. The dose of this preparation is a teaspoonful three or four times a day. A teaspoonful contains 2 grains of the lime salt, 1 ½ of the soda salt, 1 of the potassa salt, and 3 ¾ of a grain of the iron salt, besides a little hypophosphorus acid.—[American Jour. of Pharmacy.

Reports of Cases of Diphtherite, or Malignant Sore-throat. By Benjamin Godfrey, M. D., M.R.C.S.L.

Case 1. J. B——, a little boy, aged two years. He had been healthy and strong through life, with the exception of the trivial ailments incident to childhood. Five months ago he suffered from discharge of pus from the ear, with occasional epistaxis. These ailments soon passed away, and he continued pretty well until the present attack.

Oct. 17th.—The child complained of cold in the head; discharge of yellow mucoid matter from the nose, with occasional haemorrhage, dyspnœa, and dysphagia; great drowsiness and extreme languor. The tongue was slightly coated, but not injected; the skin was moist and comfortable; the pulse quick and feeble, 120; pupils dilated. On examination of the throat, a small, whitish spot was observed on the mucous membrane of the right tonsil, about the size of a pea; bowels constipated. Ordered the sixteenth of a grain of extract of belladona, with one grain of carbonate of ammonia, every three hours; a rhubarb and jalap powder at bedtime.

18th.—The patient is much weaker; dyspnœa greater, but dysphagia less. The spot has become of an ashy hue, extending over the right tonsil, and slowly creeping over the uvula. Pulse 130. Repeat the mixture.

19th and 20th.—The discharge from the nose and mouth has increased—very acrid, and of a highly offensive odor; the throat externally is much swollen; the parotid and sub-maxillary glands are much enlarged; both tonsils are coated with the ulcerative process; pulse 130; tongue coated, white; bowels nicely relieved, but great exhaustion and prostration is apparent. Ordered carbonate of ammonia and tartrate of iron every three hours; port-wine and beef-tea in abundance.

21st.—Still getting weaker; almost pulseless; extremities cold; face palid and anemic; throat very much swollen externally. Ordered warm fomentations; milk, wine, and beef-tea, and ten minims of the tincture of sesquichloride of iron every three hours.

22nd.—Less swelling of the throat externally. The black gangrenous mass is sloughing away, and a line of demarcation
is visible, of healthy granulations springing up to throw off the dead foetid mass, and to restore health to the diseased part. Dyspnœa less; dysphagia now but slight. Repeat the medicine and nourishment.

23rd and 24th.—Very much better. Several pieces of highly offensive dead material have passed away. Pulse stronger; tongue nearly clean; bowels relieved; pupils less dilated, but still drowsy and very weak.

Day by day the little sufferer improved, and gathered strength each day. The only drawback to his recovery was an occasional attack of epistaxis, which blanched the restored color of the cheeks and enfeebled the returning powers. Iron and quinine with strong beef-tea and wine, were freely given, but exhaustion soon set in, and he died on the 3rd of November, a fortnight after the attack, anæmiated and exhausted.

**Case 2.** B. B——, residing in the same house. He was a strong, well-built boy, of excitable temperament, and affectionate disposition. He was taken ill on the 22nd of October. He complained of great languor, chilliness, stiffness of the neck, dysphagia, and headache. The tongue was white, but the papillæ were not more prominent than they are in irritation of the stomach. The throat was much swollen externally, and on the tonsil a small ashy spot was seen. No heat of skin; no dryness, but the palms of the hands were moist and comfortably warm; pulse quick and weak, 130. Ordered the belladonna and ammonia mixture every three hours.

Oct. 23rd.—Bowels freely moved; throat much worse; spot very much extended, and the breath extremely foetid; discharge from the nose great; pupils much dilated; urine free and normal. Ordered to gargle well with warm water, alternating with the chloride-of-zinc gargle. Wine and beef-tea to be freely taken, and ten drops of the tincture of muriate of iron every three hours.

24th.—Throat more swollen; dysphagia greater, and dyspnœa also increased. Applied nitrate of silver solution, ten grains to the ounce, to the throat with a sponge probang. Small pieces of black disintegrated mucous membrane came away. Complains of the wine and beef-tea burning his throat, and causing his ears to tingle.

25th.—The throat is one black gangrenous mass, the odour of which is very disagreeable. His powers are fast failing. Takes half a pint of port wine a day, with beef-tea, &c. Milk also in abundance.

26th.—Fast sinking. Throat exceedingly swollen; dyspnœa greater than dysphagia; pupils much dilated; extreme drowsiness, yet perfectly sensible when aroused. He continued failing till the 27th, when he expired.
Case 3. J. B.——, aged seven years, brother of the patient before mentioned. He was attacked with the same disease, with precisely the same order of symptoms. He was treated with chlorate of potash and cascara the former part of the illness, and nitro-muriatic acid and gentian the latter part; but in seven days from the time he was attacked he also died.

Case 4. In the same house was a young lady who had watched over the before-mentioned children, and on the 28th she was also taken ill. The first symptoms were,—Shivering, and intense prostration, so powerless that she could not stand; tingling of the throat, back of the nares, and in the ears; the throat became dry, and deglutition became difficult. On examining the throat, there was the plague-striken spot on the left tonsil. Ordered four ounces of port wine and strong beef-tea, with the nitro-muriatic acid and cascara mixture.

Oct. 29th.—The spot is much increased, extending over the uvula. Powers enfeebled; pulse 120, very feeble; tongue white and furred; skin cool and moist; bowels regular; urine scanty, but natural. She can scarcely breathe through her nose. The discharge is increased from the mouth and nose, and the breath is become foetid. Ordered the chloride-of-zinc gargle, and thirty drops of the tincture of the sesquichloride of iron in infusion of columbia root. Strong hydrochloric acid was applied with a glass rod to the ulcerated surface. Several large pieces sloughed away.

30th.—Pulse very feeble, and bodily power failing. The whole of the soft palate and back of the throat is covered with the sloughing mass. The ears and Eustachian tubes are very tender and painful. Deglutition is performed with great effort and pain. The nares are extremely painful, and the discharge acrid and disagreeable. Applied again the muriatic acid. Ordered half a pint of port wine a day, with eggs and beef-tea, and to continue the medicine.

31st.—Still getting weaker. Pulse 180, irritable; skin cold and clammy; the wine passes down her throat like liquid fire, giving great pain. Ordered wine and beef-tea ad libitum; the iron to be increased in quantity, three drachms of the tincture to be taken every day.

Nov. 1st.—Better; throat less swollen, and dysphagia less; bowels well moved; dyspnœa less. At every gargle, pieces of dead material came away. Steaming her nose and throat over hot water has relieved her much. Skin beautifully warm and moist.

2nd and 3rd.—The throat is granulating quickly; several large pieces have been thrown off; fever less, and appetite improving; pulse 120, fuller and more regular.
From this time she began gradually to improve; each day pieces of morbid material were brought away. The throat healed up in the course of a week or two perfectly, and day by day her powers improved, and she left my care on November 15th, quite recovered.

Remarks—The disease appears to me to be confined to the mucous membrane, neither touching the muscular nor glandular structure. The glandular enlargement is due to sympathetic irritation, the same as we see often in other parts of the body; thus a wound in a leg producing an enlarged gland in the groin. The question has been asked—"Is it scarlet fever without the rash!" This, I think, is answered—1st, by absence of all fever; 2ndly, absence of all rash; 3rdly, papilae of the tongue not enlarged; and 4thly, no desquamation of the cuticle after the disease passes off. Yet, on the other hand, scarlet fever existed in the adjoining house. It differs also materially from cyananche tonsillaris. In that disease the abscess forms within the tonsil, and bursts its way out. But in diphtherite, the morbid change commences on the surface of the mucous membrane, and is confined solely to that covering. The extreme and rapid depression is only equalled by the depression of malignant scarlet fever, or the collapse of Asiatic cholera. Each patient that died appeared to sink from exhaustion and partial asphyxia.

Treatment.—The main point to keep in view is to support the patient's powers, and check as far as possible the inroad of the disease. The former by stimulants and tonics; the latter by the application of the strong mineral acids. The question may arise, might not tracheotomy have been successfully employed to relieve the dyspnoea. My reply is, that the depression of the patient's powers was far greater than the dyspnoea, so that the operation would have been unsafe. That depression did not result from the blood being imperfectly aerated is shown by the depression appearing before the dyspnoea. The dilatation of the pupil did not depend upon the belladonna given, for it existed as a marked symptom in every case. As regards remedies, I believe the tincture of sesquichloride of iron the best. The essentials of the disease, or the symptoms in the order they occur, are these:—Shivering, intense depression; dryness and tingling of the throat, nares, and ears; external swelling of the glands; a whitish spot on the mucous membrane of the tonsil, gradually deepening in colour as the disease progresses; dysphagia and dyspnoea; dilated pupil; impending asphyxia, and death.

[London Lancet.]

Rebecca H., aged 38, pretty good constitution, but of intemperate habits, was admitted into Bellevue Hospital, at 4 P. M., February 7th, 1858, with severe burns of both lower extremities, caused the evening before by getting her clothes on fire. When admitted, she was suffering a great deal of pain, and her stomach was so irritable that she could scarcely retain any of the nourishment and stimulants that were given her. Her pulse was frequent and feeble, and she had slept none the night previous. Stimulants and anodynes were given freely, and her limbs were ordered to be dressed with cotton soaked in equal parts of linseed oil and lime water.

Feb. 8th. Did not sleep any last night, although she had taken the eighth of a grain of morphine every hour since her admission; her stomach still remains irritable; her pulse continues frequent and weak, and her limbs feel easier. Sub-nitrate of bismuth, opium, and a small quantity of carbonate of ammonia, ordered in pills, to be given with the view of allaying the irritability of her stomach. Beef tea and rare boiled eggs directed to be taken in small quantities at a time. Stimulants and anodynes to be continued as before. This course of treatment was persevered in, but she did not improve much until February 11th, when she was able to retain all the nourishment that was given to her. Her pulse still remained frequent, although it was stronger than when she came into the hospital. She rested better at night, and continued doing well in every other respect from this time until the morning of February 15th, when she was attacked with the symptoms of trismus, that I first noticed by directing her to put out her tongue, which she could not do to any extent, as she could not separate her jaws more than three quarters of an inch. On inquiry, I ascertained that she had some stiffness in the muscles of the back of the neck. I then desired her to swallow a little beef tea, which she did with great difficulty and a feeling of choking. Morphine, in half-grain doses every two hours, was ordered to be given, and her allowance of stimulants increased.

At 11.30 A. M. she was seen by Dr. Wood, who directed that she should be put upon a stimulant, anodyne and anti-spasmodic course of treatment. Twenty ounces of brandy and a pint of madeira wine were ordered to be given in the twenty-four hours. The morphine was given pretty freely by the mouth; but as she could not swallow as much of the stimulants as was directed, they had to be in part injected into the rectum with two
ounces of lac asafoetida and one drachm of tincture of opium every two hours. She was also directed to be kept as quiet as possible. Her pulse at this time was 128, quick and moderately full, and her respiration a little more frequent than it had been for a few days past. There was not much increase in the severity of the symptoms up to 10 P. M. At 11 P. M. she commenced sleeping, and continued doing so until 2 A. M., after which she remained wakeful.

9 A. M., February 16—pulse 128, quick and moderately full; respiration 24; cannot separate her jaws more than one-third of an inch; has great difficulty in deglutition; muscles of the neck quite rigid; head drawn back, and does not appear to suffer much when undisturbed. She has had no spasms except of the muscles of the back of the neck. Same treatment continued.

6 P. M. With the exception of a little more difficulty in swallowing, is in much the same condition that she was this morning.

Feb. 17th, 9 A. M. Slumbered a little during the night; pulse 132, quick and weak; respiration 34; rigid spasm of all the muscles about the jaws and neck, and cannot drink from the feeding cup; and all the fluid she swallows has to be injected into her mouth with a small syringe. Her face assumes a livid hue during each attempt at deglutition. Has to lay on her side, owing to the strong contraction of the muscles on the back of her neck. Loud rales, produced by the air passing through the secretions in the mouth, can be heard while standing by her bedside. Her bowels moved during the night for the first time since the 14th. At 1.45 P. M., was seized with a convulsion that affected the whole body, but more especially the muscles of the back and neck. Well-marked opisthotonos remains. Her jaws are rigidly closed, and she cannot swallow anything. At 3.40 P. M., had another general convulsion that lasted for about a minute. At 4.45 P. M., has had another convulsion like the two former. Pulse 120, and weak; respiration 45, and is perspiring quite freely. Chloroform was tried, and the muscles closing, the jaws relaxed a little. From this time until twenty minutes of six, when she died, she had a great many convulsions. Just as she was breathing her last, all her muscles became quite flaccid. During the two hours preceding her death, one ounce of the tincture of opium with very near a pint of brandy and wine were injected into her rectum. She remained rational until the last moment of her life.

Her burns looked healthy all the time.

Post mortem 39 hours after death. Slight rigor mortis. Some venous congestion of the vessels of the brain and spinal cord. About two ounces of serum escaped on opening into the dura
mater of the brain and cord. No other condition noticed in these parts. The right side of the heart, especially the right auricle, was distended with black, clotted blood, while the left side contained but very little. This organ felt normal. No ulceration could be detected in either the stomach or duodenum. The colon contained a great deal of scybala. The bladder was empty and contracted.—[American Med. Monthly.

A Case of Tetanus Relieved by Amputation. By W. W. Anderson, M. D., of Stateburg, S. C.

Chavis, a strong, athletic negro man, in the prime of life, the property of Col. Richard Singleton, in the month of January, 1845, was lifting a long, heavy inch plank, with a ten-penny nail driven to the head through one end of it. The plank accidentally slipped out of his hands and fell on his foot. The nail penetrated his great toe near the joint, and between the joint and toe-nail. The next day he went to his work as usual; but a day or two afterwards his master, passing by, found him sitting by the road-side, and learning the cause of his leaving his work, ordered him to go home and poultice his foot. He did so, but continued to suffer considerable pain and uneasiness until the 15th of the same month, when I was called to see him, about five days after the accident. I found him in pain, with symptoms of approaching tetanus. An incision was made in the course of the wound, and spirits of turpentine applied. The usual remedies, such as mercurial purgatives, blisters, the free administration of opiates, etc., were followed up actively, but to no purpose. Violent spasms came on, accompanied with pain in the back of his neck, and constriction of his chest and abdomen. The spasms increased in violence and frequency every day, until the opisthotonos was so great that his head and heels were brought nearly into contact with each other during the spasms, and he was unable to swallow in the intervals of the paroxysms. So great were the debility and exhaustion, that I considered the case hopeless, and expressed this opinion to Col. Singleton, but said I wished to try the effects of amputation, as a last resort, to which he readily consented. Having only a pocket-case of instruments at hand, I rode to a carpenter's shop not far off, and borrowed a fine tenon saw, and immediately on my return began the operation. With a bistoury I made an incision around the toe, through the skin, and immediately over the joint, dissected up the integument, and turned it back; then completed the incision to the bone, and sawed it off between the joints, tied the artery, drew down the skin, and secured it with adhesive plaster. A soft compress over the stump, and
bandage, completed the operation. After a little rest, he swallowed a large dose of laudanum, and was ordered to be kept as quiet as possible. I now dissected the toe, and following the course of the wound, found at the bottom of it, imbedded in the cartilage near the joint, what I at first supposed to be the point of the nail; but on further examination, it proved to be a hard piece of black leather, which had been punched from the man's shoe by the blunt nail, and deposited there. No inflammation was apparent in the cartilage; but there is little room to doubt that this minute piece of hard leather was the cause of all the mischief. In a short time after the operation the spasms began to abate, and in a day or two ceased altogether. The patient was now convalescent. The toe healed kindly, and the man recovered his usual health. I saw him from time to time afterwards, for several years, a strong healthy negro.


New Researches on the general Paralysis of the Insane.

This affection, which has been, for the first time, well described by some French physicians, among whom particularly Bayle and Calmeil, has lately been the object of a very remarkable inaugural dissertation by M. Linas. One of the principal questions examined by this young physician, concerns the nature of this disease. Is it the effect of an inflammation of the encephalon or of its membranes, as Bayle, Delaye, Calmeil, Parchappe and others admitted, or is it a purely nervous affection of the brain, as Lelut and others have maintained?

Already Bayle had opened one hundred corpses of paralytic insane, and Calmeil forty-seven. They had found the meninges of the convexity of the cerebral lobes opaque, injected, hardened, infiltrated with serosity, and offering frequently granulations or false membranes. M. Linas has opened one hundred and fourteen bodies of paralytic insane. In twelve cases he has found the pia-mater excessively injected. The cerebral substance was quite full of blood, the grey matter being from an intense red to a dark violet. In twenty-eight cases, besides the preceding alterations, there were adhesions between the convolutions and the meninges. In seventy-four cases, the meninges were infiltrated, opaque, and as tough as a fibrous membrane; the cortical substance of the brain, sometimes violet, sometimes yellowish, according to the degree of the paralysis, always softened, less thick than in normal brains; the white substance injected, and sometimes infiltrated; the convolutions meagre, and the whole mass of the brain more or less atrophied.

In thirteen cases, besides the preceding alterations, there was
Transfusion of Blood.

I have communicated several papers on this subject to the Académie des Sciences (see Comptes Rendus, 30th Nov. 1857, p. 925), to the Société de Biologie, and to the Cercle des Sciences.

It is known that Blundell had found that a dog, bled almost to death, can recover, even if blood of a mammal of another species, be transfused into its veins; but that after a few days death always comes; while the blood of another dog being employed for the transfusion, may reproduce a lasting life.

Messrs. Prevost and Dumas declare also that mammals cannot be recalled permanently to life after a great loss of blood, if transfusion be made with blood of mammals of a species different from theirs. They state also, that the blood of animals transfused in the veins of birds, and vice versa, produces almost immediate death, after having caused violent convulsions. M. Rayer affirms, also, that the blood of man kills rabbits, after having produced convulsions. Dieffenbach has sometimes seen animals recover after transfusion of blood of animals of other species, but

one or many small circumscribed places where the encephalitis had been more violent than elsewhere. In eight cases there were also effusions of blood.

From these facts, it results positively that the paralysis of the insane depends upon a chronic inflammation of the brain and its meninges. Whether the disease begins in the membranes, as Bayle had said, or in the brain itself, as M. Calmeil maintains, is a question of comparatively little importance. The great point is, that the brain is always inflamed. M. Calmeil has ascertained with the microscope, that in doubtful cases, when the brain did not seem to be much altered with the naked eye, there were, nevertheless, all the microscopical appearances of inflammation. M. Linas relates cases to prove, that an acute encephalitis may cause the paralysis of the insane.

As regards the first symptoms of this affection, M. Linas declares, that sometimes intellectual disorders first appear, and in other cases, muscular paralysis and insanity appear at the same time. It has been said that there was always what is called by the French, ambitious delirium. But Parchappe, Trélat, Lasègue, have shown that there are exceptions to this rule, and that, therefore, there is nothing specific or essential in this symptom. M. Linas goes farther, and he calls this opinion a paradox. According to him, the delirium of paralytic insane has sometimes the monomaniac form, sometimes the hypomaniac, and in other cases the maniac; but he acknowledges that ambitious ideas are extremely common.—[New York Jour. of Med.]
never when they were in a state of apparent death after a considerable loss of blood. Bischoff also has never succeeded in restoring to life mammals that had lost a great deal of blood, in transfusing blood of birds in their veins.

An important fact, found by Bischoff, should, however, have opened the way to more successful results in transfusion. He ascertained that the arterial blood of mammals can be injected in the veins of birds, without killing them, while the venous blood causes rapid death. I have found that venous and arterial blood do not differ one from the other, except on account of the different quantities of carbonic acid and oxygen they contain. Both may kill, if they are rich in carbonic acid; both may not have any injurious influence if they contain a great quantity of oxygen. Numerous experiments have led me to the following conclusions:

1st. That arterial or venous blood from an animal of any one of the four classes of vertebrata, containing oxygen in a sufficient quantity to be scarlet, may be injected, without danger, into the veins of a vertebrated animal of any one of the four classes, provided that the amount of injected blood be not too considerable.

2nd. That arterial and venous blood of any vertebrated animal, being sufficiently rich in carbonic acid to be almost black, cannot be injected into the veins of a warm-blooded animal, without producing phenomena of asphyxia, and most frequently death, after violent convulsions, provided that the quantity of injected blood be not below one-fifty-hundredth of the weight of the animal, and also that the injection be not made too slowly.

The reasons for which Blundell, Bischoff, and others have failed to restore a lasting life after the transfusion of blood of an animal of a species different from that of the transfused one, are: 1st, That the blood employed was not fresh; 2nd, that it was in too large a quantity; 3rd, that it was injected too quickly; 4th, that it was too rich in carbonic acid, and too poor in oxygen. The greatest causes of failure were this last one, and after it the quantity of blood.

From my experiments I have arrived at the conclusion, that there is no danger in employing the blood of dogs, cats, or other mammals in transfusion in man. Besides, I have ascertained, after Dieffenbach and others, that defibrinated blood is as good as blood containing fibrin. As regards the quantity of blood, I think that four or five ounces would be as much as can be needed for an adult man or woman. It is not necessary to warm the blood, but it may be useful to do it in some cases. The blood to be transfused, either that of man or of mammal, should be received in a large open vase, and whipped at once, then passed through a thick cloth. If it is not injected at once, it must be
either whipped again, or, at least agitated to be charged with oxygen just before transfusion, which can be performed with any kind of syringe. The injection must be extremely slow, and if after the injection of two or three ounces, there is a great increase in the respiratory movements, it is well to stop for ten or fifteen minutes before finishing the transfusion.—[New York Journal of Medicine.

On Indications and Treatment of Croup.

According to Luszinsky, of Vienna, there are four indications to be followed in croup, which are—1st, to alter the peculiar crisis of the blood. This indication requires antiplastics, of which hepar sulphuris, sulphate of copper, and tartar emetic are either too uncertain, or too dangerous, because repeated vomiting would be injurious by congestion of the brain, and mercury, which readily injures by producing diarrhoea, salivation and general mercurialism. Better than all of them, are alkalies, which Luszinsky seems to have recommended prior to Lemaire and Marechal, of Paris. The hydrate of potash or soda is most antiplastic, but they are not easily tolerated; the bicarbonate is the most digestible, but the abundance of carbonic acid in the chemical composition of the bicarbonate of potash or soda diminishes the medicinal effects of the alkalies; therefore he gives the carbonate of potash or soda, from one half a drachm to two drachms every day. 2nd—To prevent the localization of the inflammation in the larynx. This indication requires no bleeding, nor leeches, but in the first stages of the disease, cold applied to the larynx, and large blistering plasters, kept in suppuration for some days. 3rd—To remove the spasm of the larynx by narcotics. 4th—To destroy or remove the pseudo-membranes which have been formed. The best caustic in these cases is a solution of from four to eight grains of nitrate of silver in an ounce of water, which is to be applied by a brush. Emetics are necessary, where pseudo-membranes are loose, or beginning to loosen, in the larynx or bronchi.—[Journal für Kinderkrankheiten, and Ibid.

On the Abuse of Irritating Applications in certain Forms of Ophthalmia. By Mr. Critchett.

There was recently a case under Mr. Critchett’s care, in the Royal Ophthalmic Hospital, in which the greatest benefit has been derived from desisting from the measure which had previously been employed. The patient is a lad of eighteen, to whose eyes, for four years past, stimulating drops had been daily
applied, on account of chronic inflammation and thickening of the conjunctiva. His eyes had been kept in a state of constant irritation, and when admitted his vision was very imperfect, on account of superficial vascularity of the cornea. He had been sent up from a considerable distance in the country. Mr. Critchett directed the eyes to be left quite alone, a single seton thread being introduced in each temple. The improvement was extremely rapid, and within a week the greater part of the vascularity had cleared away. No doubt the seton has had some good influence; but, looking at the rapidity of the cure, it seems certain that the chief agent has been the rest from injurious applications. Cases more or less similar are constantly presenting themselves, in which, with a perverseness worthy of a better cause, irritating collyria have been employed for periods far too long.—[Med. Times and Gaz., and Ranking's Abstract.

**Epilepsy treated by Ligation of the Common Carotid Artery.** By C. Angell, M. D., of Pittsburg, Indiana.

Dr. Angell has resorted to ligation of the common carotid artery on one side in two cases of epilepsy. The first operation was performed in July, 1857. The patient, a male, was twenty years of age, about five feet in height, large head, short neck, sanguine temperament, and of full habit. Epilepsy had existed for three or four years, the fits progressively becoming more frequent and severe. He had become partially idiotic. He had from fifteen to twenty fits during the forenoon of the day on which the operation was performed. The day after the operation he complained of difficulty in swallowing, and the left side became incompletely paralyzed. The paralysis continued, with difficulty of articulation and swallowing, till the next day, when he died in a comatose condition. The epileptic paroxysms did not recur after the operation.

The second operation occurred a few days after the first. The patient, a male, was forty years of age, of a full habit and sanguine temperament. Epilepsy had existed for seven years. For the last three years the paroxysms had recurred almost daily. The mind was much affected. He recovered from the operation satisfactorily, and had no return of the epilepsy for twenty-two days. At the end of that time he had a paroxysm on two successive days. Seventeen days after this a third paroxysm occurred, and about a month afterwards a fourth. These four paroxysms were all that had taken place up to the time of writing the report, a period of a little more than two months. The paroxysms after the operation differed from those which occurred previously as regards premonitions. Prior to the operation,
he had no warning of their approach; but after the operation, a sensation of dizziness preceded the attacks for several minutes, giving him time to provide against falling.

The patient declared that he felt better than at any time during the three years; some of his friends thought that there was a decided improvement in his general appearance and mental condition.

The report is made too recently after the operation to warrant any conclusion as to its permanent value in this instance.


A Large Uterine Polypus removed by the Curved Ecraseur with Double Action.

A woman fifty years of age, who had been suffering from frequent uterine haemorrhage during the last two years, was admitted into the Samaritan Hospital ten days ago, under Dr. Savage's care. Many examinations had been made elsewhere previously by various surgeons; but a polypus, if suspected, until the day before her admission, was probably quite out of reach. A swelling could even now be scarcely made out by the finger introduced far into the os uteri. Sponge tents were introduced daily. On the third day the tumour became more distinct, and then rapidly distended through the dilated os into the vagina. On the fourth day it could be felt in size and shape like a large jargonel pear (its neck not much less than its body,) extending into the uterus to be attached somewhere towards its back part. On the fifth day the polypus was lain hold of by a pair of ring forceps, the loop chain of the écraseur being passed over the handle of the forceps, slipped up, and was drawn tight, precisely as the cord in the ordinary operation by ligature, and the tumour was brought away without pain or haemorrhage. Dr. Savage observed that the unwieldly look of the instrument was suggestive of much pain and difficulty; but its curve fell into the hollow of the sacrum with the utmost facility, and its point as readily passed into the uterus as high as he thought necessary. As the chain is flexible only on one side, much careful manipulation was required before it could be got where he thought it ought to be. Before working the handle which tightened the chain, the single fore-finger readily ascertained that nothing improper was included. The handle was worked at half-minute intervals as soon as decided resistance showed that contraction had commenced. The tumour came away in six minutes. From first to last the patient said she felt no pain whatever. The haemorrhage has not appeared. Dr. Savage said he had heard of two cases of polypus thus treated in this country, but
believed they had not been recorded. He had several times seen M. Chassaignac remove parts highly vascular with his écraseur without the least hemorrhage, and thought as the plan he had adopted in this case was equally safe as the ligature, without any of its obvious annoyances, he would add his testimony to its value through the Medical Society. Dr. Savage strongly recommended an instrument with the double action, the finishing improvement of the inventor, M. Matthieu.—[London Lancet.

On the Functions of the Thyroid Body. By Dr. P. Martyn.

Dr. Peter Martyn has communicated to the Royal Society some very ingenious speculations as to the use of this remarkable body. He first called attention to the necessity of rigidity in all round instructions. This is accomplished, he thinks, by the thyroid gland, which, being pressed upon by the muscles, during the act of speaking, becomes gorged with blood, and presses upon the larynx, rendering it tense. Furthermore, he believes this so-called gland acts as a loader. In musical instruments, loaders are used to render the vibrations slower and longer, and the tone in consequence fuller, louder and deeper. They thus give to the voicing part of a small instrument the power and quality of a large one. The human organ of voice is only three inches long, and yet "has the same power as, and better quality of tone than, the instrument which more nearly approaches it—the French horn—which is nine feet, or the 'vox humana' pipe of a moderate-sized organ, which is from four to eight feet long. This economy of size in the human organ has always been wondered at, but never, that I know, explained." Finally, the author of the paper believes that by the varying shape, bulk, destiny and pressure of this body, it aids materially in producing the qualities of modulation and expression belonging to the human voice.—[Amer. Jour. of Med. Science.

Treatment of Intermittent Fever.

There is a means of treatment of fever and ague, which is by far too much neglected. It consists in applications of the cold shower-bath a little before fever sets in. Although we do not admit, as it might be concluded from a paper of M. L. Fleury, that every case will be cured by this mode of treatment, we think that the facts mentioned by this able physician are worthy of attention. He states that he has treated, during the last ten years, one hundred and fourteen patients, and that they all have been cured, only by cold shower baths, and that there has not been a single return of the disease. Forty-three were recent
cases, having existed from two days to three months; seventy-one were old and rebellious cases. In all these last cases there was an enlargement of the spleen, or of the liver, or both; there was anaemia or even a cachectic state.

One single shower-bath has often been enough to effect the cure. It has never been necessary to give more than five shower-baths. Not only is periodical fever cured by this means, but all kinds of periodical affections may also be cured in the same way.

When the periodical attacks are stopped, there are irregular ones, in most of the cases, as long as the engaged viscera have not been brought down to their normal volume. In these cases local douches have been applied twice a day, on the hepatic or splenic regions.—[Comptes Rendus de l’Acad. des Sciences, and New York Journal of Medicine.

Injection of Liquor-Ferri Sesquichlorati in Uterine Hæmorrhages.

Dr. Breslau's case of injection of liquor-ferri sesquichlorati shows the efficacy of this treatment in certain cases of excessive uterine hæmorrhage. A woman, 45 years old, had worn a pessary for a long time, which she had given up on account of pain and hemorrhages. Examined, there were found five grape-shaped polypi around the os uteri, with ulceration. These were removed by Siebold's scissors, and potassa fusa applied to the ulcerations. The hæmorrhages remitted somewhat. The uterus was, however, entirely bent upon itself, and the menses returned in great excess. The cavity of the uterus was somewhat enlarged. The return of the menorrhagia reduced the patient to an extreme degree of anaemia. Ergot of rye failed to effect any contraction of uterus or arrest of flooding. Two possible conditions presented themselves to Dr. Breslau: 1st, The five polypi attached to the cervix favored the presumption that there existed a similar warty hypertrophy of the lining membrane of the uterus; 2d, There might be a destructive ulcerative process of a malignant character going on in the same structure. In the first case, the curette of Recamier seemed indicated, in order to scrape the uterine membrane clean from the presumed excrencences. In the second case, it seemed necessary to bring a caustic and styptic agent in direct contact with the diseased membrane. To answer this latter indication, he selected the liquor-ferri sesquichlorati of the Bavarian Pharmacopœia. Having first straightened the retroflected uterus by the sound, and inserted an elastic catheter as far as the fundus, he injected one ounce and a half of the liquor-ferri, diluted with an equal quantity of water. The injected fluid was retained in the uterine cavity for a minute and a half by the pressure of the fingers at
the os around the catheter. During the operation, the patient felt a dull labourlike pain which lasted for two hours. The hæmorrhage, which had hitherto been unintermitting, now suddenly stopped, and was not renewed. After some days, brown, crumbling clots were discharged, but no fluid blood. Seven months afterwards there had been no return of menorrhagia. The patient menstruated regularly every twenty-one to twenty-four days; and through internal administration of steel and quinine, recovered robust health.—[British and Foreign Medico-Chirurgical Review. New Orleans Med. News and Gazette.

Statistics of Coiling of the Funis. By Dr. Weidemann.

Dr. Weidemann states that among 28,430 deliveries the funis has been found coiled around the child in 3,379 instances. In 3,280 of these it was coiled around the neck, and in 149 around other parts of the body. Of the 3,230 cases, 2,546 consisted in a simple coil, and in 684 there were severe coils. In relation to the causes of this occurrence, it is interesting to notice that of 1,788 cases occurring at the Marburg Midwifery Institution, the funis was in 80 (1:22.2) under 15 inches, and in 183 above 25 inches (1:9.71) in length; that in 54 (1.33) there were very little liquor amnii, and in 41 (1:43.6) there was very much; in 165 (1:10.8) the child was under 5 pounds weight, and in 28 (1:61.7) it was 8 pounds. Therefore, among the favoring causes of the occurrences may be mentioned a long funis, abundance of liquor amnii, and a small child.

Among 2,930 infants born at Marburg, 182 (1:16.09) were dead, 251 (1:12.41) were still-born. Of 725 born with coiled funis, 45 (1:16.11) were dead, and 72 (1:10.06) were still-born. Of the 45 dead-born, in 18 only could the death be referred to this alone, i.e., only 1:40.2 in the 725 examples of coiling. From an examination of the figures derived from the midwifery institutions at Dresden, Göttingen, Würzburg, Berlin, and Marburg, it results that of 13,720 new-born infants, 902 (1:15.21) were born dead; while in the 1,217 instances of coiling of the funis, 31 children were born dead, whose death could be attributed to that circumstance, giving a proportion of 1:39 to the coiling, and 1:19 to the number born dead.

Thus, as (1) the 16th child among new-born children in general, as well as among those in which coiling has taken place, is born dead; as (2) the 12th child among the new-born in general, and the 10th among those around whom the funis is coiled is born still-born; and as (3) in one child in 40 only can this coiling be regarded as really the cause of death, it is evident that this accident does not occupy a very prominent place.—[Monatsch. für Geburtshunde, and Med. Times and Gaz.]
Case of Diabetes Traumaticus. Translated for the Charleston Med. Jour. and Review.

Dr. Herman Itzigsohn reports the following case in Virchow's Archiv, for April 1857: A Mechanic, aged thirty-eight years, unmarried, previously in good health, received a year ago, a blow from the blade of a hatchet on the top of the head, a little to the left of the median line. He immediately suffered from incontinence of urine; but he could void it copiously on making a strenuous effort. Gradually diabetes manifested itself. Inordinate thirst supervened, the patient drinking sixteen quarts of fluid daily, which naturally produced a corresponding flow of urine. He dieted himself on bacon, which he craved more than any other kind of food. At this time yellow discoloration of the conjunctiva announced disorder of the liver, which condition was further indicated by swelling and uneasiness in the hepatic region.

This case is in two respects worthy of notice: firstly, for its traumatic origin; secondly, for the tardy appearance of the liver affection. In accordance with Bernard's theory, it may be supposed that a splinter of bone was driven into the fourth ventricle, or that an extravasated clot occurred there; although it is not probable, as there was not the slightest appearance of the brain being injured, either by shaking of the head, or any other irregular movement; neither was there vertigo nor headache at any time. It remains yet to be proved whether diabetes is to be traced primarily to a diseased brain, and secondarily to the liver, or not. The expression of opinion is desirable on so important a question.

Condition of the Nerves in Degenerated Tissues. Translated for the Charleston Med. Jour and Review.

In Vischow's Archiv, Band XI., Heft 2, p. 200, we find the following summary of the researches of Fred. Marsels. The author examined the condition of the nervus vagus in four human subjects, the victims of pulmonary phthisis and marasmus. He ascertained that the fatty degeneration does not attack the nerves immediately; but that the metamorphosis begins in development of cells, which in the nerve fibres itself should normally proceed. He describes the same as nucleus-holding cells of the size of the small colorless blood corpuscles, which lie in the midst of the fibres, for the most part without any intervening granular substance; and, strange to relate, he finds that neither potash, ether, nor iodine decompose them. Once when examining the ischiatric nerve, he found these cells even inside
the axis cylinders, which observation corresponds with the discovery made in some of the lower animals of the existence of cells in the nerves, partly granulated and non-nucleated, and partly transparent, clear and nucleated, strung together in the central cord of the nerves. The author did not find nuclei in the sheath of the primitive nerve-fibres in man; but in animals he thinks he saw them, where the nerve-sheaths appear to be filled by these fibres. Twice he observed the escape of the nerve contents from the sheath, when at the same time he saw the above alluded to cells.

Calcareous Salts in the Treatment of Rickets.

Dr. W. Budd, of the Bristol Royal Infirmary, states (British Medical Journal, June, 1857, p. 514) that he has derived better results, in the treatment of rickets, from the compounds of lime, than from any other remedial means. In cases short of rickets, too, where children with large heads, tumid bellies, and pasty complexion, whose spines are too weak to support their bodies, who are slow in intellect, and backward in teething, and have reached the age of eighteen months or more, without showing any desire to take to their feet, the beneficial influence of calcareous compounds is equally manifest. In such cases, Dr. Budd gives five or ten grains of phosphate of lime, in chalk mixture, thrice daily, adding a simple chalybeate if anaemia is palpably present. At the end of a fortnight, the improvement of the patient is generally conspicuous. Dr. Budd believes that the deterioration in the teeth of the rising generation is due to the insufficient supply of the inorganic constituents of these organs in the food of children, and suggests that children in cities should be fed, in part, during dentition, on biscuits containing a proportion of salts of lime.—[Virginia Med. Journal.

On Lead Colic. By M. Briquet.

A very interesting communication has been made to the Académie de Médecine, by M. Briquet, physician of the Charité hospital. The object of the paper is the nature and treatment of lead colic. What is the seat of the violent pain which then exists? Is it the digestive canal—the muscles of the abdomen—the diaphragm? Is the spinal cord affected, as Laennec and Barbier admitted? Is the pain purely neuralgic, as maintained by Andral and Grisolle? M. Briquet affirms, from researches made on forty-four patients, that the pain is in the muscles of the abdomen, sometimes in one, sometimes in many. He says also, that there is in some cases a real hyperæsthesia of the skin
in the neighborhood of the painful muscles. In some patients, however, the reverse exists: the skin is anaesthetic. He affirms that constipation has no influence whatever on the abdominal pain. He proposes in another paper to relate cases to prove that the application of galvanism to the painful muscles usually takes away the pain at once. We can assert that it is perfectly true that the pain may disappear immediately in cases of lead colic, after one application of an electro-magnetic current.—[Ibid.

EDITORIAL AND MISCELLANEOUS.

EDITORIAL.—On account of the space occupied this month by an unusual amount of original matter, and the space given to the minutes of the State Society, our Editorial matter must be deferred for the next month.

MINUTES OF THE ANNUAL MEETING OF THE STATE MEDICAL SOCIETY.

MADISON, April 14th, 1858.

The Society assembled at 10 o'clock, in the Town Hall, in Madison, and was called to order by the 1st Vice-President, Dr. H. F. Campbell, of Augusta.


The minutes of the last annual meeting, held in Augusta, April 8th, 1857, were read and approved.

The rules were suspended, and upon written application, the following gentlemen were duly elected members of the Society:


The election of officers being next in order, a ballot was ordered, and the following gentlemen were elected for the ensuing year:

Dr. J. P. Logan, of Atlanta, President; Dr. H. J. Ogleby, of Madison,
1st Vice-President; Dr. John T. Banks, of Zebulon (Pike county), 2nd Vice-President; Dr. Eben Hillyer, of Rome, Treasurer and Secretary.

On motion, a committee of two were appointed to conduct the President elect, Dr. Joseph P. Logan, to the chair; which being done, he returned his thanks to the Society, in a few appropriate remarks, for the honor conferred upon him.

Dr. E. H. W. Hunter, of Louisville, was, by ballot, elected to deliver the Oration at the next annual meeting. Dr. G. L. McCleskey, of Madison, as his alternate.

The selection of delegates to the American Medical Association being next in order, a committee of five, consisting of the following gentlemen, were appointed to nominate them, and report at their earliest convenience:—Dr. Ford, Dr. Harriss, Dr. W. F. Westmoreland, Dr. Simmons and Dr. Boyd.

Society then adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

Society called to order by the President.

Dr. Hillyer, by appointment, read an essay upon the Physiology of Menstruation.

The committee to appoint delegates to the American Medical Association, reported the names of the following gentlemen:—Juriah Harriss, of Savannah; W. T. Hollingsworth, of Morgan; F. S. Colley, of Walton; W. G. Bulloch, of Savannah; H. F. Campbell, of Augusta; H. M. Boyd, of Cave Spring; Eben Hillyer, of Rome; B. M. Smith, of Atlanta; C. B. Nottingham, of Macon; R. Q. Dickinson, of Albany; E. M. Pendleton, of Sparta; James Green, of Macon; J. F. Banks, of Zebulon.

The essay of Dr. Meiere being called for, he responded in a very interesting article upon the use of Alcohol in Typhoid Fever.

Society adjourned till 7 o'clock P. M.

Society met, pursuant to adjournment.

Dr. W. F. Westmoreland moved, that the mode of appointing Essayists and subjects be changed. That each gentleman appointed be allowed to write upon any subject of his own selection.

Upon motion, Drs. Campbell, E. Jones Oliver, W. F. Westmoreland, and Dean, were appointed a committee to nominate Essayists for the next meeting.

The report of the late Treasurer, Dr. Nottingham, for the years 1856–1857, were received and adopted.

A ballot was ordered, to determine upon a point for the next annual meeting, which resulted in the selection of Atlanta.
Dr. J. G. Westmoreland moved, that two hundred copies of the Constitution, By-Laws, Roll of Members, &c., be ordered to be published in pamphlet form, for distribution among the members of the Society.

Dr. Meiere moved, as a substitute, that all the medical journals in the State be requested to publish the Constitution, &c., in their columns—which substitute was carried.

The Committee on Essays reported the names of the following gentlemen, as Essayists for the next annual session of the Society:

Dr. H. W. D. Ford, Dr. H. F. Campbell, Dr. Robert Campbell, Dr. Smith of Griffin, Dr. E. Hillyer, Dr. Stewart of Pike county, Dr. G. B. Night, Dr. S. H. Dean, Dr. W. F. Westmoreland, Dr. W. H. Doughty of Augusta, Dr. Juriah Harriss, Dr. J. G. Howard, Dr. R. D. Arnold, Dr. V. H. Taliaferro, Dr. Joseph A. Eve, Dr. A. M. Boyd, Dr. Joseph P. Logan, Dr. H. W. Brown, Dr. J. M. Green, Dr. T. B. Ford, Dr. G. L. McCleskey.

On motion of Dr. Means, it was passed, that the report of any interesting case, or other communication, would be gladly received from any gentleman by the Society.

The following report was received from Drs. Bulloch and Arnold, a committee appointed by the Savannah Medical College, to solicit the co-operation of the Society in procuring the legalization of dissections, for medical and surgical purposes, and the modification or repeal of the laws now in force against it:

To the President and Members of the Medical Society of the State of Georgia:

Gentlemen—We, the undersigned committee, have been appointed by the Faculty of the Savannah Medical College, and instructed to confer with you, asking your concurrence in a movement having for its object the passage of a law by the Legislature of Georgia, legalizing dissection for the purposes of medical and surgical study.

To effect this great object, we would most respectfully solicit the Society to unite with us in a petition to the Legislature, at their next session, to pass an Act rendering it lawful for the Professors and Teachers in Medical Colleges and Schools in this State, to receive for Anatomical study the unclaimed bodies of persons dying at public hospitals and other kindred institutions. Such a law is in force in other States.

Accompanying this, will be found a copy of the Statute enacted by the Legislative Assembly of the State of New York.

The New York law concedes, as you will observe, very little else than the single point of legalizing dissection. Even this may be of immense practical service, by ridding us of the annoyance to which we may be at any time exposed, whilst the possession of a dead body, even for scientific purposes, is, according to the existing law, equivalent to a crime to which evil disposed persons might at any time call public attention.

Is it not the bounden duty of the State to see that the Medical Profess-
ion of the land, who are the true missionaries to suffering humanity, lack nothing needful for their efficiency and usefulness, without the necessity of going out of the State to obtain this knowledge—not forgetting that it is this profession alone that can be brought to bear on the waste of human life.

The public demands that the medical institutions shall furnish it with good and accomplished physicians and surgeons, yet it has set its face against the only means of obtaining them. But at the present time, under its present prosperity and attainment, there is that advancement made in other branches of learning and science—there is that enlightened policy in legislation upon all matters of general interest and improvement, that we have a right now to expect and to ask for some measure, some means, whereby we can procure material for dissection in some legitimate manner, that we may be enabled to make that progress and advancement in our profession that will raise it to that rank and standard it so nobly bears in other sections of our land.

We wish to be relieved from this false and dangerous position that affixes upon us the stigma of felons, in the acquisition of anatomical knowledge, and all these difficulties and excessive annoyances under which we are laboring, and which we are now obliged to encounter and overcome, to make that progress and advancement in our profession that operates only to favor our more faithful discharge of duty. This is not for the exclusive advantage of the medical man: it seeks no other benefit than that which it wishes all others to enjoy: it is for the common good. Every intelligent man, whether professional or non-professional, cannot but admit that the interests of society imperatively demand the study of practical anatomy. Then why should not the State make a suitable arrangement by law. Is there any reason why we should stand in this matter behind New York, Massachusetts, Michigan, and many other states, in an enlightened policy. Considering the rights of the medical profession, in the just and proper estimate of its value, and in comparison with the privileges that are extended to it in other states, let there be removed from our Statute books those laws repressing the study of Science—laws that should exist only in darker ages—that now put a barrier in the way almost ruinous to the pursuit of anatomical investigation, and continually threatens and exposes us to a most disgraceful and ignominious punishment!

We would prefer securing the passage of a more liberal law than that of the New York Act, so that if our views on this subject accord, any petition your honorable body may think proper to make, calculated to facilitate the passage of a bill, through the Legislature, would meet our hearty concurrence.

WM. G. BULLOCH, M. D.
R. D. ARNOLD, M. D.

The following was passed, offered by Dr. Taliaferro, of Atlanta:

Resolved, That the thanks of this Society be tendered to Col. C. R. Hanleiter, editor of the National American, for his presence on this occasion, and for the interest he manifests in the elevation of Medical Science, by the exclusion from the columns of his paper, the advertisement of all
quack medicines, secret remedies and criminal drugs, which too frequently pollute the public press.

The following, passed, offered by Dr. Dean:

Resolved, That the thanks of this Society be tendered to the town authorities of Madison, for the use of their Hall—to the Trustees of the Presbyterian Church for the use of their Church building—to the Physicians and citizens, for their courtesy and attention to the members of this Society.

The following letter, to the Society, from Dr. Arnold, was presented and read by Dr. Harriss:

Savannah, April 11, 1858.
To the Officers and Members of the Med. Society of the State of Georgia:

Gentlemen—My engagements with Savannah Medical Journal have prevented, and will prevent me from fulfilling the appointment of the Society, in writing an article on the Pathology and Treatment of Yellow Fever. I think I can do the subject more justice, in carrying out the plan I have formed, of giving in successive numbers of the Journal a full history of our terrible epidemic of 1854, for which my notes taken at the time are ample.

I respectfully request to be discharged from the further consideration of the subject.

Respectfully yours,

R. D. ARNOLD.

The request of Dr. Arnold was granted.

On motion, the following was passed:

Resolved, That this Society do now adjourn, to reassemble in the city of Atlanta, on the second Wednesday of April, 1859.

EBEN. HILLYER, M. D.,
Secretary.

New Febrifuge. Azedarach Bark.—Dr. W. R. Cornish, of the Bengal army, (Indian Annals of Med. Science, Oct. 1856,) states that the Margosa or Neem tree has long enjoyed a considerable reputation in India as a febrifuge, and that it belongs to the natural order Meliaceæ and genus "Azadirachta." It is probably the Melia Azederach of our Pharmacopoeia, and which under the name of Pride of India is so extensively employed as a shade and ornamental tree in the Southern States. Here the bark is used as a vermilifuge. Dr. C. describes the bark as being nearly white internally and purple externally. When chewed, in its recent state, its taste is at first sweetish, followed quickly by a powerful and lasting bitter. Dr. C. employed the bark during six months with nearly all the fever patients that came under his care, in the form of decoction, (the strength of which is not given,) from one to two wine-glassfuls being administered repeatedly before the accession of the paroxysm. Dr. Cornish considers that the active principal resides more especially in the light colored inner bark, the dark exterior being highly astringent, owing to a tannin analogous to that in catechu.—[American Jour. of Pharmacy.]
Ampelopsis Quinquefolia, or Virginia Creeper.—The common Ampelopsis, or Virginia Creeper, so ornamental as a deciduous climbing plant in our woods and on many walls in this city, is recommended by Dr. J. McCall as a remedy in dropsy. The bark of the vine is the part employed, and it should be gathered late in the Autumn, when the berries are fully ripe and the leaves begin to turn red and fall. It should be dried in the shade and preserved carefully from moisture. The Ampelopsis is readily known by the quinate division of the leaf. Its creeping character and frequent occurrence on the same tree with Rhus radicans, or poison vine, should lead the collector to avoid substituting the latter, which has a three-lobed leaf.

In its physiological effects it appears to "stimulate absorption and the elimination of matter through all of the outlets of the system rather than to act on any particular secretion, though by some it is stated to be actively diuretic."

Dr. McC. esteems the Ampelopsis a valuable addition to the materia medica; it is not unpleasant to take, though in taste it is acrid and persistent. Its infusion and decoction are quite mucilaginous.—[Memphis Jour. of Medicine.

Cancer in a Woman aged Eighty Years. Soap and Lead Plaster in Schirrus.—The same day that we saw the foregoing cases, we observed a woman, eighty years of age, at the Cancer Hospital, with well-marked scirrhus of the left breast, which appeared about a year ago. Notwithstanding her great age, she had the blooming, healthy cheeks of a country girl of eighteen; her general health was perfect, and under the use of tonic remedies, and soap and-lead plaster spread on leather, with a little camphor, the cancer has diminished in size, and its progress is completely arrested for the present. This is by no means an exceptional case of the arrest of the progress of cancer at this hospital; for we have observed several in whom the disease has been kept stationary for years, with no other inconvenience than the presence of the tumour in the breast, and the knowledge on the part of the patient that it was still there. The soap-and-lead plaster is one of the principal agents in effecting this desirable object; the lead appears to possess some peculiar influence in the disease.—[London Lancet.

Powdered Chlorate of Potash as an Application to Ulcers, etc.—For some time past, at the Metropolitan Free Hospital, Mr. Hutchinson has employed the powdered chlorate of potash as an application to cachectic ulcers. In most cases it appears to exert a very beneficial influence, speedily inducing cicatrization; and it is very convenient of use. The cases in which it has best suited have been some of ulcers of the leg, open buboes, simple sores on the skin of the penis, and cracked nipples. In the latter it answers admirably. The salt should be powdered very fine and dusted into the sore with the finger. It produces sharp smarting for a short time, but the pain soon subsides. In most cases suitable for its use it is also desirable to prescribe its internal administration; but with a view to making the experiments more conclusive, in the cases upon which Mr. Hutchinson founded his opinion of its efficacy, no other treatment was adopted.—[Ib.
Ulcerated Larynx in Typhoid Fever, Producing General Emphysema.—It was thought to exemplify an occasional complication of typhoid fever. The case was one of a boy who lately died under Dr. Addison's care, at Guy's Hospital. About the twelfth day of his illness his neck was observed to be emphysematous, and in a few hours the face, arms, chest, &c., were in a like condition. This continued for ten days, when he died. Besides the usual affection of the ileum, there was found at the back part of the larynx a sloughing ulcer, which communicated with a space between the oesophagus and trachea. Through this line the air had penetrated into the mediastinum, and so to the general subcutaneous tissue of the body. Considering the rarity of emphysema from such a cause, the case might be thought to be unique or accidental, but (Dr. Wilkes believed) for various reasons, it was probably not so. In the first place, emphysema had been alluded to by various writers as an occasional occurrence in typhoid fever, though the cause was unknown; and secondly, a peculiar disease of the larynx had been described by various pathologists as a part of typhoid fever. In all probability, then, these two affections stood in the relation of effect and cause, and, therefore, although this was the first case of the kind he had witnessed, it afforded, in all likelihood, an explanation of an occurrence which rarely, though sometimes, happens in the course of typhoid fever.—[Ib.

A Venereal Badge.—M. Renaud states the following fact in a feuilleton of the Gazette des Hôpitaux:—In Servia, a woman who is found to be suffering from syphilis, can claim admission into an hospital, or has the privilege of being treated at home by any medical man she chooses to call in. When she is attended at her own residence, she is obliged to wear a necklace fastened in front with a seal, which must be broken before the necklace can be removed. The clandestine breaking of this seal is severely punished; and any one coming in contact with the woman thus marked, must plainly see in what state of health she is. It is to be regretted that like measures are not in force in other parts of the East, where prostitution is carried on without any control.—[Ib.

Case of Congenital Hypertrophy of the Tongue, and Amputation.—This case was reported by Dr. Morrogh, of New Brunswick, N. J., and occurred in a girl seven years old. At birth the hypertrophy was moderate, but it had increased more or less rapidly till reaching its present dimensions; the tongue was found protruding two inches outside the jaws. It measured two inches across the teeth, and was of a corresponding thickness. The papillae of the protruded portion were enlarged, and the mucous membrane was thickened and indurated. On the under surface was a ragged, hard ulcer, produced by the pressure of the teeth. These were pressed forward considerably out of their natural position. The horizontal rami of the inferior maxilla were curved downwards, so that, when the molar teeth came in contact, a space of about one inch remained between the upper and lower incisors. By this the girl was enabled to masticate and swallow without difficulty. After the example of Dr. Harris, of Philadelphia, who, after endeavoring to amputate in a similar case by ligature, in 1829, performed the same operation, in 1835, by a double flap incision, checking the hemorrhage by ligature, Dr. Mor-
rough operated by removing a V shaped portion from the anterior middle part of the tongue, and ligating the ranine artery. Although copious hemorrhages followed, the patient went home well, on the sixth day after the operation.—[Medical and Surgical Reporter.

Transcendental Medicine; the Divine Unconscious.—It is not man who cures disease by means of his conscious spirit; but it is the divine Unconscious in man. The same power which fashions his organism, and daily recreates it in depths of mystery, is alone that which brings him back from sickness to health; and all that man's inventive mind has learnt in the healing art, for long centuries, limits himself to providing means to facilitate, to further, and in general, perhaps, to render possible, the task of this divine Unconscious... We cannot, by an immediate exercise of skill, cure the most trivial cut of the finger; the healing of even such a wound as this depends on a formation of new organic substance, of which formation the divine Unconscious is alone capable; at most we can either hinder or further this process, and in the accomplishment of the latter aim lies the essence of the surgical art.—[Dr. C. G. Carus: Ueber Lebanonmagnetismus. London Lancet.

Slitting up the Lachrymal Canals.—The practice of slitting up the lachrymal canals and their orifices, originally introduced by Mr. Bowman, for the treatment of certain cases of epiphora, still continues to be extensively employed at the Moorfields Ophthalmic Hospital. It is adapted to all cases in which either the punctum is narrowed or displaced outwards, and these constitute a very numerous class. In almost all cases of long-continued tinea tarsi, in which, by degrees, the thickening of the lower lid has everted its edge, this simple procedure relieves the patient of his most troublesome symptom. Mr. Critchett has recently had made some grooved steel probes for this operation, which materially facilitate its performance. The silver ones formerly employed being necessarily very small, were unsteady as guides to the point of the knife. The steel ones, on the contrary, give it good support, and their groove is of great advantage in securing that it shall glide easily in the right direction. To secure smoothness of surface, and prevent rusting, the steel probes are gilt. A Beer's knife is the best, and with these instruments the operation is one of extreme ease.—[Med. Times and Gazette.

Rules Respecting the Treatment of Primary Syphilis.—It seems to be now pretty generally acknowledged, in hospital practice, that mercury should be given only in those cases in which the chancre presents marked induration, and that in all others secondary symptoms should be waited for before having recourse to specific treatment. In a large majority of sores not attended by induration, no constitutional phenomena will follow; and to discriminate between those likely to be so followed and the harmless class, is admitted to be impossible. There is, therefore, no alternative, except we would give mercury very often unnecessarily, but to wait in these cases until the real nature of the affection shall have been made manifest. In the non-indurated class, local stimulants, as sulphate of copper, lunar caustic, or the acid nitrate of mercury, are the old and still favorite remedies. If the chancre be seen within a week of its origin,
whether induration have already commenced or not, we believe most surgeons would destroy it freely either by nitric acid or some other caustic.

[Med. Times and Gazette.]

New Antiperiodic.—Dr. R. S. Cauthorn, of Richmond, Va., gives an account of the root of Apocynum Cannabimnum, as a powerful antiperiodic. This power of the root was discovered by an herb doctor, by the name of Ragland, and the medicine is called “Dr. Ragland’s Root of Man” by the people who had used it. About six grains of the root is administered in the form of powder or pills, preceded in cases of ague by a dose of calomel. Dr. Cauthorn expresses much confidence in the virtue of the Apocynum Cannabimnum, and he may be correct in his inferences; but as his own observations were only extended to six cases it may be well to get further information before admitting it to the rank claimed for it by Dr. Cauthorn, which can readily be effected, as the plant is found all over the Middle States.—[Richmond Stethoscope.

Corrosive Sublimate and Collodion as an Escharotic.—Dr. Macke uses a solution of a drachm of corrosive sublimate in an ounce of collodion as an escharotic to remove small exerescences, which it is desirable to get rid of without using the knife. It is applied by means of a camel’s hair brush. When the inflammation is high, it may be abated with cold water applications without interfering with the action of the caustic, the eschar is then thrown off in from three to six days, with slight pain, and the author has not noticed absorption to take place during its contact.

[Hay’s Journal.

Gelatinized Chlorform.—Dr. Massart (Revue de Therapeutique) gives the following process for making chlorform jelly for facilitating its use as a local anaesthetic, viz: Take equal parts of white of egg and chloroform, shake the mixture and let it stand for three hours. Or take one part of white of egg and four parts of chloroform, put them in a bottle, which is then plunged in a water bath of the temperature of from 120° to 140° Fahr., when gelatinization occurs in four minutes. This preparation is applied by rubbing the painful part, and its power of affording relief is said to be remarkable. Dr. Massart prefers the cold process. If allowed to remain long in contact with the skin, it produces incipient cauterization.—[Boston Med. Journal.

Foul Ulcers of the Legs.—A woman at St. Mary’s Hospital, whose entire leg had been in a state of ulceration for years, with islands of skin here and there, has had it effectually healed up, by Mr. Coulson, by wrapping a piece of linen around it wet with a lotion of the sulphate of soda, and a bandage over all. Mr. Coulson thinks the bandaging and rest have proved as serviceable as anything else used.—[Ibid.

Yeast in Scarlet Fever.—Some years ago my attention was directed to the use of yeast in scarlet fever, by an article in your Journal from the pen of Dr. Smith, of Baltimore. I have given it this last winter in fifty-three cases, and all have recovered. These were all the cases in my
practice. Together with the yeast, inunction has been employed in two thirds of them.

I believe that the free use of yeast may prevent a bad type of the disease. It was given, at the outset, every two or three hours, in doses from a teaspoonful to a tablespoonful, and continued until desquamation.


Poison Census.—The Medical Times states, that in the four years, from 1848 to 1851, the deaths by poisoning ranged from 444 to 447 each year. In the three subsequent years, 52, '53, and '54, the number of deaths by poisoning was 370, 409, and 398. This decrease is attributed by Dr. Farr, to a certain extent, to the effect of the Legislative restrictions from the "Sale of Arsenic Act."—[Druggist's Circular.

Edinburgh Celebrities from an American Point of View.—Dr. Simpson, a short thick man, with what General Massey calls "body of Bacchus and the head of Jove," really a very fine head, covered with long black curls, seamed with gray, a round Scotch face, high cheek-bones, penetrating mild eyes and curious prim mouth, deep sunk between the nose and chin, like that of Cicero. And there is no reason why it should not, for the doctor, too, is eloquent in his own sphere. He persuades nervous females into good health, and amuses all by his genial humour and stories. He is a bold experimenter, and has hit upon other things than chloroform. Many tales of his benevolence are told. The poor never apply to him in vain. Not a few of his own profession envy him, and assail his reputation for the love of novelties, etc.; while, on the other hand, the disciples of mesmerism and the water cure declare he could say something in their favor, if he had the courage and the good will.—Professor Syme, the first operator alive, is a clean made, gentlemanly man, with a finely formed, baldish head—a most concise, decided individual, sharp, curt, and unceremonious as his own knife, but always going direct to the heart of the matter, never wasting a drop of blood or a drop of ink, or a single word. He is not much addicted to giving drugs. He likes to see what he is about, and has no fancy for poisoning people at random with the preparation of chemistry.—A colleague of these two, and an opponent of the former in reference to homeopathy warfare in Scotland, a tall, compact, swarthy, bushy-haired man, dexterous at controversy, and capable of making a clear extempore statement, in a style that many lawyers would envy.—[Scottish American Journal.

Wendell Holmes on Controversy.—"If a fellow attacked my opinions in print would I reply? Not I. Do you think I don't understand what my friend, the professor, long ago called the hydrostatic paradox of controversy? Don't know what that means? Well, I'll tell you. You know that if you had a bent tube, one arm of which was the size of a pipe stem, and the other big enough to hold the ocean, water would stand at the same hight in one as in the other. Controversy equalizes fools and wise men in the same way—and the fools know it."

The London Lancet says "that Quacks bear the same relation to the Medical Profession, with that of the pediculus to the human being on whom it preys."