

2. Some Miscellaneous Observations on the Tadpole, and on the Albumen of the Newly-laid Egg. By John Davy, M.D., F.R.S. Lond. and Edin.

On the Tadpole of the Frog.—The author *first* notices the jelly—the peculiar enveloping matter of the ova—describing its properties and uses,—the latter, according to him, for the double purpose of defending the eggs before being hatched, and affording the tadpoles food after their hatching. He considers the substance of the jelly a variety of albumen.

Secondly, He notices the ova, which he describes as resembling, in their properties and composition, those of fishes.

Thirdly, He enters into some details respecting the growth of the tadpole and its metamorphosis, specially dwelling on the fact, that whilst in the change to the advanced form there is a diminution of volume, there is an increase of solid matter—the young frog having a bony skeleton, which the tadpole is destitute of.

Fourthly, Experiments are given showing the effect of different degrees of temperature on the tadpole, and that of salt water of different degrees of saltiness. From the last it would appear that even brackish water is fatal to them, thus limiting the habitat of the species; from the former, that a temperature exceeding 98° or 100° has the same effect; whilst one a little lower seems to promote a torpid state, such as the alligator is said to acquire during the season of tropical heat and drought.

On the Albumen of the Newly-laid Egg of the Common Fowl.—From the experiments described, it would appear that the albumen of the newly-laid egg differs from that of the egg kept for some time: 1st, In becoming milky at about 150° Fahr., owing to the formation of innumerable granules, so small as barely to be seen with the microscope,—a quality which may be preserved for a considerable time by the exclusion of oxygen, effected by lubricating the shell with oil or butter; 2dly, In forming, at a higher temperature, a softer coagulum.

3. On Acupressure, a New Method of Arresting Hæmorrhage. By Professor Simpson.

Professor Simpson made a communication on acupressure, as a new mode of arresting surgical hæmorrhage. After describing the

various methods of stanching hæmorrhage in surgical wounds and operations which the Greek, Roman, Arabic, and Mediæval surgeons employed, he gave a short history of the introduction of the ligature of arteries, and spoke of it as—with the occasional exception of torsion for the smallest arteries—the hæmostatic means almost universally employed in chirurgical practice at the present day. But he thought that surgery must advance forward a step farther than the ligature of arteries, particularly if surgeons expected—as seemed to be their unanimous desire—to close their operative wounds by the immediate union or primary adhesion of their sides or walls.

All the march of modern surgery has been in the direction of attempting to increase the chances of the union of surgical wounds by the first intention, by diminishing more and more the irritation derived from the presence and action of the ligatures supposed to be inevitably required for the arrestment of the hæmorrhage. By the new hæmostatic process of acupressure, Dr Simpson hopes to overcome in a great degree all those difficulties, as by it he expected to arrest the hæmorrhage attendant upon surgical wounds *without leaving permanently any foreign body whatever* in the wound itself. It was an attempt to bring bleeding wounds, in common surgery, to the condition of wounds in *plastic surgery*, where no arterial ligatures were used, and where union by the first intention was in consequence the rule, and not the exception to it.

Dr Simpson stated that he had tested, with perfect success, the effects of acupressure as a means of effectually closing arteries and stanching hæmorrhage, first upon the lower animals, and lately in two or three operations on the human subject. The instruments which he proposed should be used for the purpose were very sharp-pointed slender needles or pins of passive or non-oxidizable iron, headed with wax or glass, and in other respects also like the hare-lip needles commonly used by surgeons at the present day, but longer when circumstances required. They might be coated with silver or zinc on the surface, if such protection were deemed requisite.

That needles used for the purpose of acupressure, and passed freely through the walls and flaps of wounds, will not be attended by any great degree of disturbance or irritation, is rendered in the highest degree probable by all that we know of the tolerance of living animal tissues to the contact of metallic bodies. Long ago John Hunter pointed out that small-shot, needles, pins, &c., when passed

into and imbedded in the living body, seldom or never produced any inflammatory action, or none at least beyond the stage of adhesive inflammation, even when lodged for years. Some time ago, when the subject of acupuncture specially attracted the attention of medical men, Cloquet, Pelletan, Pouillet, and others, showed that the passage and retention of long acupuncture needles was attended with little or no irritation in the implicated living tissues. The reviewer of their works and experiments in the *Edinburgh Medical Journal* for 1827 observes,—“It is a *remarkable* circumstance that the acupuncture needles never cause inflammation in their neighbourhood. If they are rudely handled or ruffled by the clothes of the patient, they may produce a little irritation; but if they are properly secured and protected, they may be left in the body for an *indefinite* length of time without causing any of the effects which usually arise on account of the presence of foreign bodies. In one of M. Cloquet’s patients, they were left in the temples for eighteen days; and in cases in which needles have been swallowed, they have remained without causing inflammation for a much longer period. It appears probable, from the facts collected on the subject, that metallic bodies of every kind may remain imbedded in the animal tissues without being productive of injury.” (Page 197.) All the late observations and experiments upon metallic sutures are confirmatory of the same great pathological law, of the tolerance of living tissues for the contact of metallic bodies imbedded within their substance. In the operation for hare-lip, where the whole success or failure of the operation depends on the establishment or not of union by the first intention, surgeons use needles to keep the lips of the wound approximated, often compressing these needles strongly with their figure-of-eight ligatures, and find this measure the most successful means which they can adopt for accomplishing primary adhesion.

The acupressure of arteries, when compared with the ligature of them, appears, as a means of arresting hæmorrhage, to present various important advantages:—

1st, Acupressure will be found more easy, simple, and expeditious in its application than the ligature.

2d, The needles in acupressure can scarcely be considered as foreign irritating bodies in the wound, and may always be entirely removed in two or three days, or as soon as the artery is considered closed; whilst the ligatures are truly foreign irritating

bodies, and cannot be removed till they have ulcerated through the tied vessels.

3d, The ligature inevitably produces ulceration, suppuration, and gangrene at each arterial point at which it is applied; whilst the closure of arterial tubes by acupressure is not attended by any such severe and morbid consequences.

4th, The chances, therefore, of the union of wounds by the first intention should be much greater under the arrestment of surgical hæmorrhage by acupressure than by the ligature.

5th, Phlebitis, Pyæmia, &c., or, in other words, traumatic or surgical fever, seem not unfrequently to be excited by the unhealthy local suppurations and limited sloughings which are liable to be set up in wounds by the presence and irritation of the ligatures.

6th, Such dangerous and fatal complications are less likely to be excited by the employment of acupressure, seeing the presence of a metallic needle has no such tendency to create local suppurations and sloughs in the wound, such as occur in the seats of arterial ligatures.

And 7th, Hence, under the use of acupressure, we are entitled to expect both, *first*, that surgical wounds will heal more kindly and close more speedily; and, *secondly*, that surgical operations and injuries will be less frequently attended than at present by the disastrous effects and perils of surgical fever.

The following Donations to the Library were announced:—

Transactions of the Botanical Society of Edinburgh. Vol. VI., Part

II. 8vo.—*From the Society.*

Monthly Notices of Astronomical Society. Vol. XX., No. 1. 8vo.

—*From the Society.*

Proceedings of the Linnean Society. Vol. IV., No. 15. 8vo.—

From the Society.

Canadian Journal. September and November 1859. 8vo.—*From*

the Publishers.

Journal of Statistical Society. December 1859. 8vo.—*From the*

Society.

Transactions of the Royal Medical and Chirurgical Society of

London, 1859. 8vo.—*From the Society.*

Madras Journal of Literature and Science. April to September

1858. 8vo.—*From the Madras Literary Society.*

Transactions of Bombay Geographical Society. Vol. XIV. 8vo.
—*From the Society.*

Aanteekeningen van het Verhandelde in de Sectie-Vergaderingen
van het Provinciaal Utrechtsche Genootschap van Kunsten en
Wetenschappen. 1855-1859. Utrecht. 8vo.—*From the
Society.*

Verslag van het Verhandelde in de Algemeene Vergadering van
het Provinciaal Utrechtsche Genootschap van Kunsten en
Wetenschappen. 1856-59. 8vo.—*From the Society.*

Annales de l'Observatoire physique centrale de Russie. 1856.
4to.—*From the Observatory.*

Compte Rendu Annuel. 1857. 4to.—*From the Academy of
Sciences.*

Report on Canadian Graptolites. By James Hall, Esq. Montreal,
1858. 8vo.—*From the Author.*

Tuesday, 3d January 1860.

PROFESSOR MORE in the Chair.

The following Communications were read:—

1. Some Miscellaneous Observations on the Growth of Birds,
their Specific Gravity, and on the Stomach of Fishes in
Relation to Digestion. By John Davy, M.D., F.R.S. Lond.
and Edin.

On the Growth of Birds.—The author's observations on this
subject are chiefly confined to the martin, the common fowl, the
turkey, and goose. They all tend to show a rapid growth, varying
in degree according to the habits of the species. The young mar-
tin was found on leaving its nest heavier than the parent bird;
and this the growth, as to time, of about twenty days, reckoning
from the hatching of the egg. A turkey poult, the day it quitted
the egg, weighed one ounce and three quarters; in five months it
had increased to ten pounds. A gosling, in thirty-four days, had
increased in weight from six ounces to six pounds. A chick of the
Dorking breed, in three months, had increased from an ounce and a
half to three pounds. This rapidity of growth—a rapidity in the
instance of nestlings fed by the parent birds essential to their ex-
istence—is referred to two principal causes, an active digestion and