

In all animals the minute structure of the brain, as detected by the microscope, appears in a measure similar, consisting of globules, and a more or less fluid and often elastic transparent matter. The ganglions appear also similarly composed in all the animal tribes of a congeries of nervous fibres.

*Some Observations on the Migration of Birds.* By the late Edward Jenner, M.D. F.R.S.; with an Introductory Letter to Sir Humphry Davy, Bart. P.R.S. By the Rev. G. C. Jenner. Read November 27, 1823. [*Phil. Trans.* 1824, p. 11.]

The author's intention in this paper is not to give a general history of the migration of birds, but to adduce some hitherto unnoticed facts respecting the causes which excite the bird at certain seasons of the year to quit one country for another. Among these the most prominent are certain changes in the generative organs, and the necessity of a climate or country where they can be better accommodated with succours for their infant brood than in that from which they depart. He also adduces facts to prove that their departure from this country is not in consequence of change of temperature or scarcity of food, but the result of the accomplishment of their errand, namely, the incubation and rearing their young.

The author then offers some remarks on the winter birds of passage, tending to show that they quit this country in spring in quest of a situation better adapted to their intended purpose, and that they are actuated by the same impulse in leaving this country that causes the spring birds to come to it, and not by want of food. That the emigration of the winter birds is less complete than that of the spring migrators, and that some species, especially the wild duck and wood-pigeon, breed here.

Redwings and fieldfares appear to be the most regular and uniform in their appearance and disappearance, and never seem to risk the trial of incubation here.

Dr. Jenner remarks, that in severe and long-continued frosts, birds often quit the country through want of food, but that they return upon the approach of more temperate weather, which is announced by their reappearance. The arrival of water birds, on the contrary, forebodes the approach of intense frost.

The author then offers some observations on the singing of birds, and details some additional facts and particulars respecting the different sizes of the generative organs of birds, as they appear at different seasons of the year.

*On the Nature of the Acid and Saline Matters usually existing in the Stomachs of Animals.* By William Prout, M.D. F.R.S. Read December 11, 1823. [*Phil. Trans.* 1824, p. 45.]

The object of this communication is to prove that the free acid usually existing in the stomachs of animals is the muriatic acid, and that the salts present are alkaline muriates.

The contents of a rabbit's stomach were digested in distilled water, and the clear portion of liquid thus obtained divided into four parts. The first was evaporated to dryness, and the quantity of muriatic acid present in the residuary fixed salts determined by nitrate of silver; the second was supersaturated with potash, evaporated and decomposed by nitrate of silver as before, by which the total quantity of muriatic acid in the fluid was ascertained; the third was neutralized by a solution of potash of known strength, and the required quantity accurately noticed. This gave the proportion of free acid present; and by adding this to that in union with a fixed alkali, as above determined, and subtracting the sum from the total quantity of muriatic acid present, the proportion of acid in union with ammonia was estimated. But as a check to this result, the third neutralized portion was evaporated to dryness, and the muriate of ammonia expelled by heat; the quantity of muriatic acid left in union with the fixed alkali was then determined as before; and by subtracting this from the total quantity, the quantity in union with ammonia was determined.

From such experiments the author concludes, that no inconsiderable quantity of unsaturated muriatic acid exists in the stomachs of animals during digestion; and from the examination of the fluid ejected from the human stomach in a case of dyspepsia, he infers that there also the muriatic acid performs the same office.

*On the North Polar Distances of the principal fixed Stars.* By John Brinkley, D.D. F.R.S. &c. *Andrews Professor of Astronomy in the University of Dublin.* Read December 18, 1823. [*Phil. Trans.* 1824, p. 50.]

The author observes, that of the recent catalogues that have been formed of the principal fixed stars, two, those of Dublin and Greenwich, agree very exactly. That of M. Bessel differs considerably; but the differences are such that they would agree by a modification of the co-efficients of refraction employed for correcting the observations. Mr. Pond, he says, has applied the refractions of Bradley to the instrument of Dublin; he himself thinks it more safe to determine the refraction for each place from its own instruments; and he objects to the reasoning by which Mr. Pond has endeavoured to prove the existence of a flexure in the tube of the instrument of Dublin.

Dr. Brinkley makes the mean difference of the stars of Greenwich and Dublin for 1813 only a few tenths of a second; for 1823, still less. Neither the Dublin Catalogue, nor any other more extensive comparison, affords, in his opinion, a confirmation of the hypothesis of a general southern motion, which he is therefore inclined to attribute principally to a slight inaccuracy of the Greenwich Catalogue for 1813.

The comparisons unfavourable to the southern motion are those of Bradley's observations at Wanstead, in 1728; and some French ob-