

as extremely fruitful in breeding, excellent for eating, hardy in their nature, and obtainable at a low cost, in fact, the very sheep for cottagers. There have been also several satisfactory experiments by members in the way of acclimating and hybridising foreign deer. The society is also endeavoring to acclimatise the guan and the caracou—both birds from Central America, and both likely to be valuable additions to our domestic poultry. Among the other birds to which the society is paying attention, and which it hopes to introduce in abundance, may be named the *Tallegala* (or Australian mound-building turkey), the Australian and African bustards, the Wonga-Wonga pigeon, a great variety of ducks and water-fowl, the Honduras turkey, the Chinese sand grouse, Canadian Grouse, prairie grouse, American quail and gelinotte. Various valuable crosses of ducks have been obtained. In the way of vegetables, the society is making strenuous endeavours to introduce the *Dioscorea Batatas*, or Chinese yam. This vegetable is reported to be excellent for eating, and not difficult of cultivation. A specimen was exhibited, weighing 3lbs. 15oz., and a supply of tubers for planting has been issued to twelve members of the society. Several experiments of great prospective value are now fairly in progress, with every prospect of success, and channels for commencing others of still greater importance have been opened. The system upon which the society is arranged may now be said to be in good working order, and opportunities are offered for conducting experiments of the highest importance, if the means of bearing the expenses are provided. It must be remembered that in bringing over mammals, birds, and fishes from abroad, not only must the original cost and expense of transport be borne by the society, but it is also necessary to offer rewards to the ships' officers who take charge of the creatures during the voyage, as an inducement to give their zealous co-operation. The Council looks forward, indeed, with confident expectation to the time when the society will, like the French Société Impériale d'Acclimatation, number its members by thousands, and possess gardens and other appliances, provided by the Government for the conduct of its operations, similar to those which the French society is fortunate enough to possess.—*Educational Times*.

—By the last American mail we receive the intelligence that the inhabitants of the Red River colony, British North America, have inaugurated, under the auspices of the Governor of the settlement, and of the Bishop of Rupert's Land, a scientific association under the title of "The Institute of Rupert's Land," which promises to produce important results, in collecting and disseminating information respecting the extensive territories of the Hudson's Bay Company in North America. This immense region, occupying an area nearly equal to the whole of Europe, has hitherto remained almost a sealed land to the traveller and to the man of science. The expeditions of Franklin, Back, and Richardson, have, it is true, passed at different periods rapidly and hastily through the country on their way to the scene of their explorations in the Arctic Seas, and more recently the Colonial Office, and the Provincial Government of Canada, have each despatched expeditions to explore the comparatively narrow strip of country watered by the Red River and the Saskatchewan. A geological map of the country, and an ethnological map of the Indian tribes inhabiting it, by Mr. A. K. Isbister have also recently been published by order of the House of Commons, among the Parliamentary Papers relating to the Hudson's Bay Company. But beyond this the immense continent stretching from the frontiers of Canada to the Arctic Sea still remains practically a *terra incognita* to science. The object of the Institute of Rupert's Land is to dispel the ignorance which has hitherto prevailed respecting the condition and resources of this extensive and important territory by aiding and encouraging scientific exploration, and by directing and systematising the observations of individual travellers, missionaries, and traders in all parts of the country, and publishing from time to time the results, so far as they may prove interesting to science. Copies of the inaugural address of the bishop of Rupert's Land have been extensively circulated among the leading literary and scientific societies of England, Canada and the United States.—(*Idem*.)

—Dr. Dufosé communicates to the French Academy further researches into the vocal powers of certain fish, most of his observations being made upon species of *Trigla* and *Zeus* (gurnards and dories). He states the sounds to be produced by the vibration of the muscles belonging to the air bladder, and that large gurnards may be heard at a distance of six or seven yards. Out of five or six hundred individuals of the species mentioned, their voices were comprised between *si* and *re* inclusive. The sounds were instantaneous, or prolonged for several minutes, sometimes as long as seven or eight minutes. The pitch often varies during a single "sonorous emission." The finest vocal performers appear to belong to the species *Morrude*, who surpass all their congeners in producing a great number of completely distinct sounds. "They sustain the simple sounds better, and modulate better the compound sounds; they render more distinctly long successions of sounds different in tone and pitch; in fine, there is less dissonance in the sonorous vibrations they produce. Other species, however, beat them in intensity.—*Intellectual Observer*."

—The President of the Microscopic Society of London stated in his annual address that the beautiful machine presented by Mr. Peters has enabled the Lord's Prayer to be written in the 356,000th of a

square inch—a space like a minute dot. The English Bible contains 3,566,480 letters. The Lord's Prayer, ending with "Deliver us from evil," 223 letters; so that the Bible is 15,932 times longer than the prayer, and if we employ round numbers we may say it could be written in 16,000 times the space occupied by the prayer or in less than the twenty-second part of a square inch. In other words, the whole Bible might be written twenty-two times in one square inch. This wonderfully minute writing is clearly legible when placed under a good microscope. In using the machine the operator writes with a pencil attached to one end of a long lever, whatever marks he makes on a piece of paper are infinitesimally reduced in corresponding motions, by which a glass plate is moved over a minute diamond point. By means of Ibbetson's geometric chuck, beautiful geometric designs may be engraved on a similar scale of minuteness.—(*Idem*.)

—Under the title of Dialysis, a series of Phenomena (a brief account of which appeared in the "Educational Times," of September) have been brought prominently before the scientific world in recent lectures at the Royal Institution. It will be remembered that in the course of an extensive series of experiments on the diffusibility of various substances in liquids, Professor Graham found that certain general laws could be traced. A great distinction was found to exist between the diffusive power of certain crystalline bodies, such as salt, nitre, sugar, Epsom salts, &c., and that of such uncrystallisable substances as gum, albumen, starch, gelatine, and other similar bodies which unite readily with water but do not crystallise. As soon as these facts had been ascertained and announced, their practical application became speedily evident. Dialysers, having the appearance of tambourines, formed of rings of gutta-percha, over which is stretched "parchment-paper" (formed by the action of strong sulphuric acid on ordinary paper), have been constructed and applied to various practical purposes. When required for use, these dialysers are floated upon the surface of pure water, and the mixture to be dialysed poured within these, when dialysis immediately commences, the crystalloid substances passing through into the water, and the non-crystallised, or "colloid," remaining in the dialyser. This singular action may at once be rendered visible by pouring into the dialyser a mixture of Magenta dye and burnt sugar, when the former being crystallised, passes through, tinging the water of its own beautiful hue, whilst the burnt sugar, having had its crystalloid character destroyed by the heat, remains behind. The dialyser is now used to obtain solutions in pure water of many substances formerly thought to have been insoluble, among which may be mentioned silica, Prussian blue, peroxide of iron, alumina, or the basis of clay, and stannic acid, or peroxide of tin. In this way it has solved that hitherto insoluble geological puzzle, the formation of flint, and it has aided the medical jurist in his endeavours to separate arsenic and other crystalloid poisons from the heterogeneous contents of the human stomach. Much light has been thrown by it on many hitherto obscure points of physiology, and in the arts of dyeing and those requiring the ready separation of different substances, it is easy to see the advantages offered by the discovery.—*Educational Times*.

MISCELLANEOUS INTELLIGENCE.

—Few readers can be aware, until they have had occasion to test the fact, how much labor or research is often saved by such a table as the following:

- 1607—Virginia settled by the En- 1816—Indiana admitted into the
glish Union.
1614—New York settled by the 1816—Mississippi admitted into the
Dutch Union.
1620—Massachusetts settled by the 1818—Illinois admitted into the Un-
Puritans. ion.
1624—New Jersey settled by the 1819—Alabama admitted into the
Dutch Union.
1628—Delaware settled by Swedes 1820—Maine admitted into the Un-
and Finns. ion.
1635—Maryland settled by Irish 1821—Missouri admitted into the
Catholics. Union.
1636—Rhode Island settled by Ro- 1836—Michigan admitted into the
ger Williams. Union.
1639—North Carolina settled by the 1836—Arkansas admitted into the
English. Union.
1670—South Carolina settled by the 1845—Florida admitted into the
Huguenots. Union.
1682—Pennsylvania settled by Wil- 1845—Texas admitted into the Un-
liam Penn. ion.
1732—Georgia settled by Ogle- 1846—Iowa admitted into the Un-
thorpe. ion.
1791—Vermont admitted into the 1848—Wisconsin admitted into the
Union. Union.
1792—Kentucky admitted into the 1850—California admitted into the
Union. Union.
1796—Tennessee admitted into the 1856—Oregon admitted into the
Union. Union.
1802—Ohio admitted into the Un- 1858—Minnesota admitted into the
ion. Union.
1811—Louisiana admitted into the 1861—Kansas admitted into the
Union. Union.