of the earth can be made fertile. There are places incapable of being afforested, which would not give the necessary nourishment to trees.

ORIGIN OF THE CEREALS

RECENT numbers of *Naturen* contain interesting papers, by Prof. Schübeler, on the original habitat of some of the cereals, and the subsequent cultivation in the Scandinavian lands and Iceland of barley and rye more especially. It would appear that barley was cultivated before other cereals in Scandinavia, and that the generic term "corn" was applied among Northmen to this grain only from the oldest times, and that in the Norwegian laws of the seventeenth and eighteenth centuries wherever reference was made to the "*Kornskat*"—or standard by which land in the Northern lands was, and still is, rated in accordance with the corn it is capable of yielding—the term was understood to apply to barley. Proof of the high latitude to which the cultivation was carried in early ages is afforded by the Egil's Saga, where mention is made of a barn in Helgeland (65° N. lat.) used for the storing of corn, and which was so large that tables could be spread within it for the entertainment of 800 guests. In Iceland barley was cultivated from the time of its colonisation, in 870, till the middle of the fourteenth century, or, according to Jón Storrason, as lately as 1400. From that period down to our own times barley has not been grown in Iceland with any systematic attention, the islanders being dependent on the home country for their supplies of corn. In the last century, however, various attempts were made both by the Danish Government and private individuals to obtain home-grown corn in Iceland, and the success with which these endeavours were attended gives additional importance to the systematic undertaking, which has been set on foot by Dr. Schübeler and others, within the last three years, for the introduction into the island of the hardier cereals, vegetables, and fruits. As many as 382 samples of seeds of ornamental and useful plants, most of which were collected from the neighbourhood of Christiania, are now being cultivated at Reykjavik under the special direction of the local government doctor, Herr Schierbeck, who succeeded in 1883 in cutting barley ninety-eight days after the sowing of the seed, which had come from Alten (70° N. lat.). And here it may be observed that this seems the polar limit in Norway for anything like good barley crops. The seed is generally sown at the end of May, and in favourable seasons it may be cut at the end of August; the growth of the stalk being often 2½ inches in twenty-four hours. North of 60° or 61° barley cannot be successfully grown in Norway at more than from 1800 to 2000 feet above the sea-level. In Sweden the polar limit is about 68° or 66°, but even there, as in Finland, night-frosts prove very destructive to the young barley. In some of the fjeld valleys of Norway, on the other hand, barley may in favourable seasons be cut eight or nine weeks after its sowing, and thus two crops may be reaped in one summer. According even to a tradition current in Thelemarken, a farm there owes its name *Triset* to the *three* crops reaped in the land in one year! Rye early came into use as a bread-stuff in Scandinavia, and in 1490 the Norwegian Council of State issued an ordinance making it obligatory on every peasant to lay down a certain proportion of his land in rye. In Norway the polar limit of summer rye is about 69°, and that of winter rye about 61°; but in Sweden it has been carried along the coast as far north as 65°. The summer rye crops are generally sown and fit for cutting about the same time as barley, although occasionally in Southern Norway less than ninety days are required for their full maturity.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

THE Gilchrist Trustees have instituted a Scholarship of the annual value of 50*l.*, for three years, tenable at either Girton or Newnham College, Cambridge, to be awarded in connection with the Cambridge Higher Local Examination. The first award will be made on the results of the examination to be held in June. Further information may be obtained from the secretaries of the two colleges.

AT a recent meeting of the Senate of the Royal University of Ireland, two Fellows in the Department of Natural Science were elected. The successful competitors were the Rev. Marshal L. Klein, of the Catholic University College, and Mr. Marcus M. Hartog, Professor of Natural History, Queen's College, Cork. The salary attached to each of the Fellowships is 400*l.* a year.

SCIENTIFIC SERIALS

The Quarterly Journal of Microscopical Science, April, contains:—On the urinary organs of the Amphipoda, by W. B. Spencer, B.A. (plate 13).—The skin and nervous system of Priapulus and Halicryptus, by R. Scharff, Ph.D. (plate 14).—The eye and optic tract of insects, by S. J. Hickson, B.A. (plates 15–17).—A peculiar sense organ in *Scutigera coleoptrata*, one of the Myriopoda, by F. G. Heathcote, B.A. (plate 18).—The structure and development of Loxosoma, by S. F. Harmer, B.Sc. (plates 19–21).—A new hypothesis as to the relationship of the lung-book of Scorpio to the gill-book of Limulus, by E. R. Lankester, M.A.—A supplement number is announced to be published during May.

The Journal of the Royal Microscopical Society for April contains:—The Rev. W. H. Dallinger's address as President (plates 4–6).—The Lantern Microscope, by L. Wright.—On some unusual forms of lactic ferment; *Bacterium lactis*, by R. L. Maddox, M.D.—On a cata-dioptric immersion illuminator, by J. W. Stephenson.—With the usual summary of current researches in zoology and botany.

American Journal of Science, May.—Experiments undertaken to determine the modulus of elasticity of ice and the velocity of sound in ice, by John Trowbridge and Austin L. McRae. The average of all the observations was found to be 72×10^9 as compared with Bevan's absolute modulus 54×10^9. The velocity was determined at 2900 m. per second, or about nine times the velocity of sound in air.—Contributions from the Agricultural Experiment Station of the University of Wisconsin: digestion experiments, by H. P. Armsby. These experiments, made on sheep fed with hay, clover, malt-sprouts, and cotton seed-meal, yielded so many uncertain results that no satisfactory averages could be determined. Such averages may be made the basis of the calculation of rations in practice; but neither they nor the single results upon any given fodder can properly enter into any scientific calculation of the nutritive effect of a ration.—Chemical analysis of massive safflorite, by Le Roy W. McCay.—Application of photography to the study of electrical measurements (two illustrations), by John Trowbridge and Hammond Vinton Hayes.—On the production of alternating currents by means of a direct-current dynamo-electric machine, by John Trowbridge and Hammond Vinton Hayes.—Chemical analysis of a variety of topaz discovered in 1882 by Mr. N. H. Perry in the Stoneham district, State of Maine (two illustrations), by F. W. Clarke and J. S. Diller.—A notice of the relation observed by Dr. Weber between the residual elasticity and the chemical constitution of glass, by O. T. Sherman.—On the meridional deflection of ice-streams, as shown in the *moraines* of the extinct glaciers in the Mono Lake Valley, Eastern California (two illustrations), by W. J. McGee.—The pre-Glacial channel of Eagle River, Keweenaw Point, Lake Superior (one illustration), by Charles Whittlesey.—Note on the age of the slaty and arenaceous rocks in the vicinity of Schenectady, Schenectady County, New York, by S. W. Ford. These formations, usually referred to the epoch of the Lorraine shales, are regarded by the author as belonging to the Utica age. From them were obtained various fossils, including a species of Lingula which he considers to be the Utica species, *L. curta*.

The American Naturalist, March, contains:—Indian corn and the Indians, by E. L. Sturtevant.—The evolution of the Vertebrata, progressive and retrogressive, by E. D. Cope.—On the larval forms of *Spirorbis borealis*, by J. W. Fewkes.—Pennsylvania, before and after the elevation of the Appalachian Mountains; a study in dynamical geology, by E. W. Claypole.—Life and nature in Southern Labrador, by A. S. Packard.

April.—Why certain kinds of timber prevail in certain localities, by J. T. Campbell.—The evolution of the Vertebrata, by E. D. Cope.—Progress of North American Invertebrate palæontology for 1884, by J. B. Marcou.—The clam-worm, by S. Lockwood.—Life and nature in Southern Labrador, by A. S. Packard.

May.—Some new Infusoria (with illustrations), by A. C. Stokes.—Kitchen-garden esculents of American origin (I.), by E. L. Sturtevant.—The Lemuroidea and the Insectivora of the