former. Seven intervals of the normal metronome from 0.4 to 1.5 seconds were studied. The result showed that the indifference point at which the judgment accorded most accurately with the time of sensation was 0.755 seconds. Intervals less than this were overestimated, those greater than it underestimated. — (*Philos. studien*, ii. 1.) G. S. H. [75

EARLY INSTITUTIONS.

Universities. — On taking the rectorship of the University of Greifswald, Professor Dr. Behrend describes briefly the beginning and growth of universities: the origin of different faculties (medicine, from Salerno; law, from Bologna; theology and philosophy, from Paris); constitutions; relation with the state, and so on. — (*Deutsche rundschau*, Dec., 1882.) D. W. R. [76

English surnames. — Dr. Beddoe, F.R.S., considers them from an ethnological point of view. Large proportion of Norman names among the peers; Saxon names among the small land-owners and yeomen; nothing like a complete amalgamation of blood between the upper and lower classes. Probably a tenth of the inhabitants of the British Isles bear names of the Celtic-Irish type. Several other conclusions are reached. — (*Journ. anthrop. inst.*, xii. 2.) D. W. R. [77

Agrarian institutions. — Professor Hanssen continues his studies of land-holding and agriculture among the early Germans. Certain heads of families joined together in clearing a tract of land. Upon this they took house-lots (permanent holdings) and arable lots (shifted from one part of the clearing to another, according to the field-grass system). The house-lots were held in severalty, the rest of the land in equal, but undivided shares. This was the primitive agricultural community. It is assumed by Professor Hanssen to have been an association of land-owners. We would suggest that it is an open question whether it was an association of land-owners, or an association of tenants. — (*Zeitsch. gesammt. staatsw.*, 1882, 3, 4.) D. W. R. [78

Medieval formulae. — The "Monumenta Germaniae historica. Leges V. Formulae. Pars pria. 4to. 1882," has appeared. — D. W. R. [79

INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.

GOVERNMENT ORGANIZATIONS.

Smithsonian institution.

Telegraphic announcements of astronomical discoveries. — Arrangements having been completed with the director of the Harvard college observatory for conducting the system of telegraphic announcements of astronomical discoveries, which was established by this institution in 1873, correspondents are informed that hereafter the American centre of reception and distribution of such announcements will be the Harvard college observatory, Cambridge, Mass., to which address all astronomical telegrams should in future be sent. It is hoped and believed that this transfer of a highly important service will prove beneficial to the interests of astronomical science.

National museum.

The museum cases and stands have been recently examined, with a view to adoption, by gentlemen from Richmond college, Cornell university, and the museum of hygiene connected with the United States navy.

Recent additions. — A large collection of remains of the Arctic sea-cow (Rhytina gigas), including eleven skulls more or less perfect, has been recently received from Dr. Leonard Steineger, collector for the Smithsonian institution, at Bering Island. The specimens were accompanied by two skulls of ziphioid whales, and some valuable bird-skins. Nineteen car-loads of specimens have been received from the late Permanent exhibition in Philadelphia.

Cast of a whale. — A cast of a humpback whale has just been completed. It represents a young female, 32 feet 5 inches long, which was captured at Provincetown, Mass., about three years ago. The cast shows one-half the exterior. In the concavity, which is painted black, the skeleton is mounted in its natural position. The work has been done by Mr. Joseph Palmer.

Preparation for the fisheries exhibition. — A large number of objects have been added to the collection illustrating the fisheries, for exhibition in London in April. A model of an undisturbed oyster-bank and of one overdredged are being prepared under the supervision of Lieut. Winslow. One of the museum preparators is in New Haven, engaged in making, under the direction of Mr. Emerton of Yale College, a model of a giant squid. Five relief-models, representing the entire Atlantic coast of the United States, are in course of preparation by the U. S. coast survey, at the expense of the U. S. fish commission. Those representing the Gulf of Maine and the Gulf of Mexico are completed. The latter was exhibited by Professor Hilgard at the recent meeting of the National academy. The isobathic lines are shown in the same manner as the contour lines of the geological relief-maps. The models are prepared by Mr. C. Lindenkohl. Mr. Henry W. Elliott and Capt. J. W. Collins have prepared a series of drawings of fishing-vessels in action. They are probably the most accurate drawings of this nature ever produced, and are worthy of study by artists engaged on marine subjects. The Light-house board and Life-saving service will make a full display of their apparatus.

Model of Zuñi. — An accurate model of the pueblo of Zuñi has recently been completed for the Bureau of ethnology under the superintendence of Mr. Victor Mindeleff. It is about 19 × 11 feet square, and shows the details of the houses and streets. The data for its construction were derived from actual surveys.

Archeological fraud. — A remarkable archeological fraud in the form of a stone idol arrived at the museum a few days ago. It had been advertised as probably the 'god of all the gods.' It has the beak of a bird, the forehead of a lizard, the wings of a beetle, and the abdomen of a grasshopper. The feet are six in number, — four like those of a gopher tortoise, two like those of a seal. The general color is brown, relieved here and there with lighter spots and streaks. The length of the object is about 2½ feet, the width about 6 inches.

Department of agriculture.

Extension of statistical division. — The scope of the statistical division was last year enlarged to include in its monthly reports statements showing the through rates of transportation by railroad and steamboat companies, on all the principal routes of the country, for the principal agricultural products.

A European agency was also established for the collection of statistics indicating the prospective European demand for American grains and meats. The agency is in charge of Mr. Edmund J. Moffatt, and its headquarters are at the office of the consul-general at London. The results of this widening of the scope of the statistical division have already proved highly satisfactory.

Meeting of agriculturists. — Commissioner Loring has issued another call for a series of meetings of prominent agriculturists at the department at Washington, commencing Jan. 23. The subjects announced for discussion were: agricultural colleges and their work, the animal industries of the country, and the cotton crop and its relation to agriculture in the cotton States.

National experiment stations. — A bill is now before Congress, introduced by Representative Carpenter of Iowa, providing for the establishment of national experiment stations in connection with the agricultural colleges of the different States, and under the control of the department. An annual appropriation of $15,000 for each station is provided for, to be expended in salaries and the expenses of experiments. The bill has received the indorsement of Commissioner Loring, and is considered the soundest and most practical scheme in the way of agricultural legislation which has been brought before Congress since the agricultural college land grant of 1862. Small as the appropriation is, it will give a much-needed stimulus to the work of some of our smaller agricultural colleges, especially in the south.

Sorghum. — Since 1877, the efforts of the department to prove the possibility of profitable sugar-making from sorghum have attracted much attention throughout the country, and been variously commented on by the agricultural press. Some time since, the results of the investigations of Professor Collier, chemist of the department, were submitted to the National academy of sciences for an opinion as to their value. The report of the committee of the academy, first made, was withdrawn for revision on the 21st of last July, and returned to the commissioner on the 15th of November, when an abstract was given to the daily press. The entire report will be published as a special document. Realizing the fact that the results of the mill-work at Washington during the two previous years had been discouraging, Dr. Loring devoted the congressional appropriation for the continuance of experiments in 1883 to the remuneration of the successful manufacturers throughout the country, for operations conducted under his direction. In this way a great amount of practical experience from different sections has been obtained, and will soon be published in a special report. This course was heartily indorsed by the Cane-growers' association of the Mississippi valley at its recent annual meeting in St. Louis, and before which the commissioner delivered an address, in which he reviewed the whole subject of sorghum sugar-making, and urged that the effort to establish so important an industry as the production of sugar in the Northern States should be conducted with the same judgment, patience, and perseverance as have been applied to the great industries already established.

PUBLIC AND PRIVATE INSTITUTIONS.

Museum of comparative zoology, Cambridge, Mass.

Selections from embryological monographs. — One of the last numbers of the memoirs of the museum contains the first of a series of Selections from embryological monographs, compiled by Alexander Agassiz, Walter Faxon, and E. L. Mark. The object of these selections is to give to the student in an easily accessible form a more or less complete iconography of the embryology of each group of the animal kingdom. This selection is not intended as a handbook, but rather as an atlas to accompany any general work on the subject. The plates will be issued in parts, each part covering a somewhat limited field. The quarto illustrations are accompanied by a carefully prepared explanation of the plates, and by a bibliography in octavo, to be made as complete as possible.

The first part, Crustacea, is by Mr. Faxon. It consists of fourteen plates and twenty-eight pages of explanatory matter. The source from which each figure is taken is invariably indicated, while a general heading for the principal groups treated gives a list of the authors whose figures have been copied. A number of unpublished original drawings by Mr. Agassiz have been incorporated wherever they supplement published material.

We may form some idea of the activity of the different nations in the field of morphology by stating that these illustrations were copied from the memoirs of nine Germans, five Americans, four Russians and as many English, of three Scandinavians, two Belgians, one Dutchman, and one Frenchman; the importance of the contributions is also fairly represented in the above enumeration.

Dr. A. S. Packard, jun., and Dr. J. W. Fewkes, will assist the editors of the 'selections' in the preparation of the Insects and Acalephae. The second number of the bibliography, Echinodermata, by Alexander Agassiz, has been issued as No. 2 of vol. x. of the museum bulletin; the illustrations of that part will be published during the coming summer.

Academy of natural sciences, Philadelphia, Penn.

The Vaux gift. — Arrangements are being made for the reception and arrangement of the fine collections of minerals and antiquities belonging to the late William S. Vaux. The gift includes a sufficient endowment to provide for the appointment of a special curator and for the annual increase of both collections by purchase of specimens.

Professor A. Heilprin began a course of twenty-five lectures on physiography and paleontology, on Jan. 12, to be given on the successive Tuesdays and Fridays of each week. The lectures involve the consideration of the following general subjects: The rock masses of the earth's crust; present and past climates; wind and currents; geographical and geological distribution of animals; and the succession of life on the globe.

At the close of Professor Heilprin's lectures, Professor H. Carvill Lewis will deliver a course on mineralogy and lithology, a large portion of which will consist of a series of field-lectures upon the mineralogy and lithology of Philadelphia and vicinity, of which a fuller account will be given in a future issue. Similar courses delivered last year by Professors Heilprin and Lewis were well attended, principally by teachers in the colleges and higher schools of the city.

NOTES AND NEWS.

— A telegram from London, Jan. 17, informs us that Mr. George H. Darwin has been elected professor of astronomy and experimental philosophy in the University of Cambridge. Professor Darwin is a son of the late Charles R. Darwin, and, until very recently, has been a Fellow of Trinity College. Al-