zoology. Nor can names already proposed as subgeneric be employed also as generic names in another sense.

(25) When several generic names are proposed for a genus at nearly the same date, so that their priority cannot be settled, the name for which a type-species is given is to be preferred. In all uncertain cases the decision of the author who first arranges the synonymy is to be followed.

(26) When a genus is separated into several genera the old name must be retained for the type-species. If this cannot be positively ascertained, the author who splits up the genus must select one of the species originally in the genus as the type. When a subgenus is raised to generic rank the subgeneric name becomes the generic name.

E. RULES FOR THE NAMES OF THE HIGHER SYSTEMATIC GROUPS.

(27) Names for higher systematic groups of animals must have a plural termination.

(28) Names of families and subfamilies must henceforth be taken from the name of one of the genera belonging to the group, and formed from the stem of that name, with the addition of *-idæ* (plural of *-ides* [Gr. *-ειδης*], masc.) for the families and *-inæ* (fem.) for the subfamilies.

Mr. Sclater pointed out the principal points in which these rules conflict with the Stricklandian Code commonly used in this country. These were three in number, namely :—

(1) The German Rules (Sect. 1) disclaimed any relation to botany, so that, according to them, the same generic names might be used in zoology and botany. This was contrary to the Stricklandian Code (Sect. 10).

(2) Under Sect. 5 of the German Rules the same term was to be used for the generic and specific name of a species. if these names had priority. This was contrary to the Stricklandian Code (Sect. 13).

(3) The German Rules (Sect. 7) adopted the tenth edition of the "Systema Naturæ" (1758) as the starting-point of zoological nomenclature, whereas the Stricklandian Code (Sect. 2) adopted the twelfth (1766).

After a few remarks from the President (Sir W. H. Flower), Mr. Hartert spoke in favour of the modifications proposed in the German Rules. The debate was continued by Prof. Lankester, Mr. H. J. Elwes, Dr. D. Sharp, Mr. Blanford, Dr. H. O. Forbes, and others, but no final resolution was adopted.

SCIENCE IN THE MAGAZINES.

THE eleventh instalment of Mr. Herbert Spencer's admirable series of papers on "Professional Institutions" appears in the *Contemporary*, the profession of which he traces the development this month being that of the painter. Mr. Spencer does not concern himself with the rude drawings made by prehistoric man, but deals rather with the development of pictorial art from the point at which the early civilised stage is connected with the uncivilised, illustrating his arguments by reference to the remains and records of historic peoples. The first step in the development appears to have been the painting of the image of a dead man, to be placed on his grave. Priests painted as well as carved these effigies ; in fact, an examination of available evidence shows that "pictorial art in its first stages was occupied with sacred subjects, and the priest, when not himself the executant, was the director of the executants." Painting was originally subordinated to sculpture, which fact accounts for its relatively slow development. It became secularised in the later stages of Grecian life. Mr. Spencer traces these changes, as well as the differentiation of the lay painter from the clerical painter, and the differentiation of lay painters from one another.

Short descriptions of the chief discoveries of Edison and Tesla are given in *Scribner*, by Mr. E. B. Andrews, in the course of his "History of the Last Quarter-Century in the United States," his article being a continuation of previous ones contributed by him to the same magazine. "Edison," he remarks, "is famous less for originality than for dogged patience and subtle insight, enabling him to fructify others' devices. . . . A more original genius than Edison, veritably a wizard, is his young disciple, Nikola Tesla, who was born in Servia, and found employment with Edison on landing in America." *Scribner* also contains an illustrated article on "Carnations," by J. H. Connelly.

Under the title "Ways and Means in Arid America," Mr. W. E. Smythe contributes to the *Century* an account of the influence irrigation has exerted upon the development of Kansas and her sister States during the past fifteen years. The adoption of irrigation in a territory which had hitherto depended entirely upon the rainfall "extended the known limits of arid America hundreds of miles to the eastward [of Garden City] and more than one thousand miles north and south, thus adding to the empire of irrigation all the western portions of the Dakatos, Nebraska, Kansas, Oklahoma, and Texas, together with eastern Colorado." Mr. Smythe's description of what has been achieved during the past few years in these States, and in several widely separated localities in America, is a valuable object-lesson for farmers and fruit-growers.

The following are among other articles of scientific interest in the reviews and magazines received :—"The Increase of Insanity," by Mr. W. J. Corbet, in the *Fortnightly*, and an article in the *Humanitarian*, on "The Multiplication of the Unfit," by Mr. Arnold White, having much the same teachings; "The Baltic Canal, and how it came to be made," by Mr. W. H. Wheeler, in *Longman's ;* "The Development of Dodos," in the *National*, in which Miss Mary Kingsley shows some of the effects of European culture on the West African, her paper supporting the views expressed at the British Association meeting last year, when a formal discussion took place on the results of interference with the civilisation of native races ; "The Tintometer," and "An Old Geography," in *Chambers's Journal ;* "Niagara Falls and Water Power," by Mr. Alex. Richardson, in *Good Words*.

SMITHSONIAN INVESTIGATIONS.

MR. S. P. LANGLEY'S report of the operations of the Smithsonian Institution during the year ending with June 1895, has come to hand. The report includes a general account of the affairs of the Institution during the period it covers, and also descriptions of the work accomplished in the U.S. National Museum, the Bureau of Ethnology, the Bureau of International Exchanges, the National Zoological Park, and the Astro-physical Observatory. We extract from it the following brief statement with reference to three investigations carried on under the supervision of the Institution :—

The investigation of the infra-red spectrum has been continued in the Astro-physical Observatory during the past year with increased energy, and Mr. Langley says that though only provisional results have yet been published, which are intended merely to show the character and progress of the work, it is because the means of giving greater exactness are constantly growing, so that the result it is now hoped to present will be given with the aim of a still higher standard of precision ; an aim which it may be trusted will be considered a legitimate cause for the delay in the appearance of the final results.

It is stated that a larger number of bolographic records has been obtained than in any previous year, and that these continuous observations have been accompanied by further improvement in the apparatus, a higher standard of accuracy, and a nearer approach to the completion of the research ; but that they have also shown beyond a doubt that the limit of accuracy which is desirable can never be reached in the present most unsuitable, provisional site, which is subject to every kind of disturbance due to the neighbourhood of the streets of a busy city.

Prof. E. W. Morley's investigations on the density of oxygen and hydrogen, referred to in previous reports as aided in part by the Institution, have been completed, and his memoir has been published. The atomic weight of oxygen may be called the base upon which practically our entire system of atomic weights rests, and a small error in its measurement becomes large by multiplication in the higher parts of the atomic weight scale. Hence its accurate determination is of fundamental importance. In his investigation Prof. Morley has studied the problem by two methods : (1) By the synthesis of water, in which he, for the first time, has achieved completeness by actually weighing the hydrogen, the oxygen, and the water formed, whereas all his predecessors took one or another of these factors by difference. (2) By the density ratios between oxygen and hydrogen. In this method he has weighed the gases of greater purity and in larger quantity than hitherto, and he has in some instances operated without the intervention of stopcocks, and therefore with no possibility of error due to leakage. He has also, as a correction to the density ratio,