

the Pollak prize has been adjudged to those who exhibited their devices; consequently there is a large sum to be awarded in September, 1901. It has not been decided as yet to whom the prize of \$6,500 for improved sugar machinery will be given. During 1901 the Nobel prizes will be awarded, and in three of them the inventor may find his opportunity. One prize will be for the invention or discovery made in the domain of physical science, another prize in chemistry, and a third in physiology and medicine. The value of each of these prizes is very large, being \$80,400. It should be remembered that in none of these cases does the inventor part with any of his rights, and his receiving a prize does not interfere in any way with the material reward of the inventor. The recent success of Prof. Pupin in selling an invention for nearly \$500,000 is fresh in the memory of all.

It is becoming quite customary for societies and associations to offer prizes for what might be termed minor discoveries. For instance, the chief topics of discussion of the Chemical Congress, at the recent meeting held at Hanover, was a substitute for benzene, and last autumn the subject came up once more at the meeting at Cassel, and it was decided to offer a premium of \$250 for an effective substitute for benzene, or for means for rendering it less dangerous, the objectionable points about benzene being its inflammability and volatility and the danger of poisoning the atmosphere.

At first sight it might seem as though this was a very small prize for a society to offer, but, as it has already been stated, the inventor does not, by accepting a prize of this nature, cede any of his rights, which, in the case of a substitute for benzene, would undoubtedly bring the inventor large wealth. The Bressa prize of \$1,920 is offered by the Académie Royale des Sciences de Turin, and the competition is open to savants and inventors of all nations for the most important discovery in the arts and sciences during the period 1897-1900. The aggregate of prizes offered is by no means inconsiderable, and tends to stimulate invention in a healthy manner.

#### ARE YOU ABOUT TO BUILD?

The Building Edition of the SCIENTIFIC AMERICAN occupies in its field the same important position held by the parent paper in its own sphere of activity. The scope of the Building Edition has been enlarged by the introduction of many new and valuable features. No periodical in the United States can claim more distinction as regards its mechanical execution than this beautiful monthly magazine, with its fine views of exteriors and attractive interiors. The policy of showing only executed work is strictly adhered to, thus differentiating it from many of its contemporaries. The illustrations show how the house actually looks, the plans show how it is arranged, the description of the plates tell how it is built, who owns it, who is the architect, and who are the contractors, and when attainable, its cost. This information is all valuable to those about to build, as well as those who are interested in the subject from a professional and financial point of view. There are many interiors and examples of home decoration, showing what can be accomplished on various scales of expenditure. Other plates are devoted to interesting subjects at home and abroad, such as public buildings, churches, libraries, fine iron-work, stables, etc. Groups of cozy corners, doors, windows and other similar features will be published throughout the year.

The literary contents comprise a number of new features which will enhance the value of the magazine many fold. "Monthly Comment" is devoted to current events. The editorials deal in a practical manner with the problems which confront the architect, contractor or owner in the design, execution or improvement of the house. As wide a range of the subjects as possible is given. "Interviews With Architects" forms a new feature of the year, and gives the ripe experience of men standing high in their profession in a most interesting manner. "New Books" will deal with the latest publications, and the reviews will be discriminating. The Correspondence column will tend to keep the Editor and reader in close touch. Any question relating to subjects of architecture, building, sanitary science, etc., will be answered and a cordial interchange of views between readers encouraged. "New Building Patents" will contain a digest of patents relating to building and sanitary science. Each month a considerable space is devoted to a summary of current articles within the purview of the paper. This digest will consist of condensations of long articles relating to building and also shorter notes, and the field covered will be a wide one. On the whole, the Building Edition merits the warm support of every one directly or indirectly interested in architecture or building.

#### ZENOBE T. GRAMME.

Zénohe T. Gramme died near Paris on January 20, and in his death electrical science has suffered a great loss, as he was the inventor of the Gramme ring, which

made the modern dynamo possible. He was born in 1836 in Belgium and in early life was a carpenter. He became interested in electrical construction, and in 1870 he improved on the toothed-ring armature of Pacinotti and devised the uniformly wound ring armature machine with which his name has ever since been connected. His dynamo, which was exhibited at the Centennial Exposition, 1876, attracted great attention. The commercial success of the machine was rapid. It was the first practical machine in which were combined the features of continuity of commutation, the self-exciting arrangement, good lamination in the armature core, and reasonably good proportions in the magnetic circuit.

#### OUR BUSINESS AND PERSONAL WANT COLUMN.

We would call the attention of our readers to our Business and Personal Want Column, which will be found on page 108 of our issue of February 16 and page 123 of the present issue. We have taken a new departure in connection with this column, which we think will be fully appreciated by manufacturers throughout the world and by all of our readers who are in search of information which they could not otherwise acquire.

The SCIENTIFIC AMERICAN has now become a center of information for thousands of readers, who apply for information regarding the particular line of manufactured goods in which they are interested—information which they are unable to obtain through the ordinary channels at their command. Our daily mail is flooded with letters inquiring as to who is the manufacturer of this and that article, or of some improvement on a certain machine, which the correspondent would like to buy if he could get into touch with the manufacturer.

We could, of course, give the person inquiring the name and address of one or two manufacturers in the line requested, but it occurred to us that it was only fair to our readers and enterprising manufacturers that we should endeavor to ascertain for the party inquiring the name and address of every manufacturer that we possibly could in the line desired, thus giving him a wide field for choice, and opening the way for pushing manufacturers to compete with some chance of success.

It will be seen at a glance that this column will open up a new and important field to manufacturers of all kinds. If they refer weekly to the inquiries in this column they may at any time find therein an inquiry for just the class of goods they deal in or manufacture. A letter to us, preferably accompanied by their catalogue and giving in brief as much information as is necessary, together with the number of the inquiry, will, in a short while, put them in immediate touch with the party who desires to buy the goods in question. We, in fact, act as a clearing house between the persons desiring information and the manufacturers ready to fill their wants.

We hope that our efforts will be appreciated to the extent that all manufacturers in the lines inquired for will assist us by weekly replying to these inquiries, as it may be the means of opening a greater field of trade than is now possible.

#### ZODIACAL LIGHT.

M. Leo Brenner has lately given an account of the observations on the zodiacal light which he has made at the Observatory of Manora (Austria). Very few persons have seen this phenomenon; in the northern part of the Continent it is usually quite masked by the lighting of the cities. In the south and in the tropical regions the phenomenon is more striking, but the writer has known many ship captains who have sailed around the globe for many years without having seen the zodiacal light. This phenomenon seems to have been observed only for the last 300 years, and the ancient writers make no mention of it; some have concluded from this fact that the light has only been visible in modern time, but this opinion is difficult to admit. It is generally supposed that the zodiacal light constitutes a clear and distinct phenomenon only in the tropical regions, and Humboldt says that at the Equator, at points of 9,000 to 12,000 feet altitude, it often exceeds in brightness the lightest part of the milky way. However, the author observes that at Lussin, from which he writes, at the sea level, the zodiacal light is generally from four to six times as intense as the milky way and often eight or ten times as bright; this can only be explained in two ways, either that the light is more intense in that region or that the milky way is less brilliant. There the zodiacal light appears at the most favorable times for its visibility, namely from January to March and also in September and October, as a pyramid of light whose base is at the point where the sun has set, while the point traverses the zodiac; at the summit the light is scarcely apparent, but it increases afterward and at a point opposite gives a second cone of light which is called "antizodiacal." This last phenomenon has been the object of observations since 1854, at which time it was examined by Brorsen; however, it was seen in

1803 by Humboldt. The author states that the brightness of the zodiacal light as he saw it was such that often in the main part and up to 40 deg. in height he could not see any of the stars with the naked eye; as to the antizodiacal light, which few observers on the Continent have seen, it appears three times as bright as the milky way, and thus his region seems to be especially favored in this respect. The spectroscope shows that the zodiacal light is reflected solar light, and the polariscope, by which the polarized light is separated from the ordinary rays, confirms this supposition. The green lines of the aurora borealis, sometimes seen in its spectrum, have been shown by Wright to belong not to the zodiacal light, but to aurores which are only observed by the spectroscope. Various theories have been proposed as to the formation of the zodiacal light, but none of these are conclusive.

#### SCIENCE NOTES.

Michael G. Mulhall, a noted statistician, died recently in London. He forecasted the twelfth American census within 95,000, showing how very precise and accurate statistical science can be in skillful hands.

The United States Weather Bureau was awarded a Grand Prix at the Paris Exposition. Gold medals were also awarded to Prof. C. F. Marvin for instruments, apparatus and appliances, and to Prof. A. J. Henry for cloud photographs. The Weather Bureau will make an extensive exhibit at the Pan-American Exposition.

Major Serpa Pinto, the fourth explorer to cross tropical Africa from sea to sea, died in Portugal a short time ago, his predecessors in the trans-African journey being Livingstone, Cameron, and Stanley. Pinto's journey lasted from November, 1877, when he started from Benguela, to March, 1879, when he arrived at Durban. His book entitled "How I Crossed Africa" is a record of original discovery and of fierce battling with the natives, of hair-breadth escapes, of perils from wild beasts and the depletion of supplies. He was a scientific explorer, which is more than can be said of many pioneers in geographical research.

The American Physical Society met during the holidays in Columbia University. At the morning business meeting the following names of officers for the ensuing year were chosen to be balloted for by the members, the results to be announced at the next meeting: President, Henry A. Rowland, of Johns Hopkins University; Vice-President, A. A. Michelson, of Chicago University; Secretary, Ernest Merritt, of Cornell University; and Treasurer, William Hallock, of Columbia University. The Councilors are Henry Crew, of the Northwestern University, and Edward B. Rosa, of Wesleyan University. After the business meeting six papers bearing on problems in physics were read by as many university professors.

A new species of mountain sheep has been sent from Dawson City to Director Hornaday, of the New York Zoological Society. This species is absolutely new to science, and is so strikingly different as to render its title to independent specific rank beyond question. Director Hornaday has named it the *Ovis Fannini*, in honor of Curator Fannin, of the Provincial Museum of British Columbia. In the Klondike region it is known as a "saddlebacked" or "piebald" sheep. Its head, neck, breast, and abdomen and inside of the fore-legs are of a snow white. The other portions of the body are a brownish gray, giving the animal the appearance of being covered with a gray blanket. There are now 945 members of the society, an increase of 271 during the year. It is desired to increase the membership to 3,000. The total attendance of the year was 525,938, the largest daily attendance being on Decoration Day, 20,134. A motor road will soon be completed in the park, on which the society will operate its own motor carriages for the convenience of the public.

Macaroni is made of hard red wheat from the Black Sea, mixed with Italian wheat grown mainly in the plains around Foggia. This is ground into a coarse flour. The bran and husks are removed, and it is kneaded in hot water until it has the appearance and consistency of dough. It is then placed in a vertical brass cylinder eight or nine inches in diameter, the bottom of which is perforated with holes of various sizes, according to the product desired. The dough is placed in the top of the cylinder and is driven down by hydraulic pressure through the perforated plate, and is cut off by hand in lengths. It is then hung up on canes in the sun to dry. In the case of tubular macaroni and spaghetti, a conical blade is fixed in the middle of the dough to form the tube. This cuts through the dough, and the macaroni issues from the blade with a slit all along its length. This, however, shrinks together at once, and a perfect tube is made. Almost no macaroni is now made by the laborious hand process. There was for a long time a prejudice against machinery, but this has been overcome. The best macaroni comes from Torre dell' Annunziata. Nearly half a million boxes are sent annually to the United States.