H. N. Warren contributes a short article to the *Chemical News* on calcium carbid as a new reducing agent. He finds that when it is heated with many metallic oxids they are reduced, forming generally alloys of the metal with a small amount of calcium. Even the oxids of chromium, molybdenum and uranium are readily reduced. Calcium carbid, which is so cheap, may come to replace for reduction the more expensive sodium or potassium.

M. Güntz, to whom has just been awarded the Saintour prize of the French Academy of Sciences, shows in a recent Comptes Rendues that the lithium nitrid obtained by him is not pure. Lithium combines directly with nitrogen, but the nitrid on formation dissolves a portion of the substance of the vessel in which the lithium is contained. Iron is least readily attacked; silver, platinum, quartz and graphite-carbon are readily acted upon, and cannot be used; hence all of the lithium nitrid formed is more or less contaminated by foreign matter. J. L. H.

ASTRONOMICAL NOTES.

The Nichols Press, of Lynn., Mass., has published a large quarto volume of 258 pages by Dr. T. J. J. See, entitled 'Researches on the Evolution of the Stellar Systems.' Dr. See gives a comprehensive account of the present state of our knowledge of the binary systems, and, while he includes but little matter which has not already appeared in print, he has produced a book which will certainly be of great interest to students of the subject.

The volume contains excellent accounts of the methods in use for the determination of binary star orbits, as well as reprints of Dr. See's own recent articles published in the *Astronomische Nachrichten*. These articles relate to the use of spectroscopic observations for the study of the binary stars and for the application of a rigorous test of the universality of the law of gravitation. They have been criticised in the same journal in which they appeared, but in the present volume no notice is taken of these criticisms. Following the theoretical introduction, Dr. See gives his determinations of the orbits of forty stars, together with the observations on which they are based. We have not space to enter into a detailed criticism of this part of the book, but we are not sure that Dr. See's methods will meet with the complete approval of astronomers in general. Thus in the case of Zeta Sagittarii, Dr. See says: "While in Virginia recently I took occasion to measure this star, and, although the object was seen with difficulty, owing to its low altitude, I could discover a distinct elongation in the direction 194°.7; the distance could not be fixed with much confidence, but my settings of the micrometer gave 0″.35. The estimates of distance were substantially the same, but I am now convinced, from my distinct recollection of the appearance of the object, that both the measure and the estimate were too large." We doubt whether recollections of the appearance of a double star should have any place in the discussion of an orbit. Another thing which students might expect in the present work is a series of extended ephemerides computed from the orbits given by the author. But the ephemerides usually extend for a year or two only, and this circumstance will diminish somewhat the practical usefulness of the work.

The observatory of Karlsruhe has issued the fifth volume of its publications. We find in it observations of stars south of the equator, made during the years 1892 to 1894, together with a catalogue derived from them. This volume is the last which will be issued from Karlsruhe, as the observatory has been moved to Heidelberg, where new buildings have been erected on one of the hills overlooking the Neckar valley.

WE have received the *Annuaire du Bureau des Longitudes* for 1897. It contains the usual mass of interesting statistical matter and a series of 'Notices' of more than usual interest. Three of the latter are by the late Professor Tisserand. They are entitled:

1. On the proper motion of the Solar System.

2. On the fourth meeting of the International Committee for the photographic chart of the heavens.

3. On the meeting of the International Committee for fundamental stars.

These notices by Tisserand have a sad as well as scientific interest, for they are followed by the orations delivered at his grave by Poincaré, Janssen and Loewy.

There is also a notice by Poincaré on the Röntgen rays, and one by Janssen on 'Epochs in the Astronomical History of the Planets.' These notices are not technical in character, and all are very interesting. The volume can be obtained for 30 cents, and should be in the hands of all persons interested in any department of astronomy.

WE note the appearance of the British Nautical Almanac for the year 1900. It is in all respects similar to the volume for the preceding year. In glancing over the preface of the work one cannot help noticing how small has been the use made of the theoretical researches of British astronomers. Probably not one formula or constant of importance is taken from a published research of English origin. And where results depend on observational series made in England these results are generally taken from discussions of the English observations by foreign astronomers. It is a truism that science is international, but truisms do not always penetrate government offices. The course of the British authorities must be highly commended, for they have used what they thought was best for science, without regard to the nationality of its origin. H. J.

SCIENTIFIC NOTES AND NEWS.

PROFESSOR SIMON NEWCOMB and Lord Kelvin have been elected honorary members of the St. Petersburg Academy of Science. Lord Rayleigh and M. Callandreau have been elected corresponding members.

DR. ARTHUR AUWERS, the Berlin astronomer, has been awarded a gold medal by the German Emperor.

PROFESSOR JOSEPH LE CONTE, after attending the meetings of the American and British Associations for the Advancement of Science, and the autumn meeting of the National Academy of Sciences, and presiding over the annual meeting of the Geological Society of America, went to Milledgeville, Ga., and, at the place where he was married fifty years ago, surrounded by friends and relatives, including Professor W. Le Conte Stevens, he celebrated, on January 14th, his golden wedding. Professor Le Conte has now returned to the University of California. Although seventy-four years of age, Professor Le Conte retains all the energy and originality in research, publication and teaching which, during the past fifty years, have accomplished so much for the advancement of science.

HEINRICH GÄTKE, the veteran ornithologist, of Heligoland, died on January 1st, at the ripe age of 83. He is best known from his great work on Bird Migration, which contains the results of more than half a century of close observation at a single point—the rocky islet of Heligoland, in the North Sea. This small island is situated at a point where two great lines of migration meet, and is the most favorable spot known in the world for studying the periodic movements of a very large number of birds. Gätke's work is chiefly valuable as a record of facts of observation; his deductions are not accepted by most American students of migration.

THE deaths are announced of Isidore Strauss, professor of experimental pathology, at Paris, and known for his important contributions to our knowledge of contagious diseases and bacteriology; of Jean Hubert Thiry, formerly professor of surgical pathology in the University of Brussels; of Dr. George Weyer, professor of mathematics and astronomy at the University