of detail would require something like this: 549.8, 551.35, .4, .49, .71, .751, .762, .763, .78, .79, 552.11, .13, leaving out entirely the part relating to paleontology. Translating these numbers we have: 549, mineralogy; 549.8, combustible materials, coal; 55, geology; 551, physical structure of the globe; 551.35, erosion; 551.4, physiography; 551.49, hydrography; 551.71, pre-Cambrian; 551.751, Carboniferous; 551.762, Jurassic; 551.763, Cretaceous; 551.73, Tertiary; 551.79, Pleistocene; 552, lithology; 552.11, acid rocks; 552.13, basic rocks.

This is by no means an exceptional case, and there are many papers in this bibliography which require just such an analysis to give any one a satisfactory idea of their scope and character.

The attempt to classify our scientific knowledge by rows of figures will fail to meet the requirements of the average student. Any system, whatsoever, based on such a principle will require considerable effort to become sufficiently familiar with it to be readily employed, and it will be necessary to use it frequently in order to retain it in the memory. The average geologist will find it extremely inconvenient to fulfill either or both of these requisites.

F. B. WEEKS.

U. S. GEOLOGICAL SURVEY.

SCIENTIFIC JOURNALS.

American Chemical Journal, June: 'The Action of Zinc on Copper Silicide:' By G. DE CHALMOT. When molten zinc is added to melted copper silicide the two metals combine and the silicon separates in a crystalline condition. 'On the Colored Compounds obtained from Sodic Alcoholates and Picryl Chloride:' By C. L. JACKSON and W. F. BOOS. A number of complicated compounds have been isolated and studied. On the 'Action of Orthodiazobenzenesulphonic Acid on Methyl and Ethyl Alcohol:' By E. C. FRANKLIN. In these experiments the alkoxy reaction alone took place. The only effect due to increase in pressure was an increase in the yield of the alkoxy product. The action of nitric acid on the amides was also studied. 'On the Taste and Affinity of Acids:' By J. H. KASTLE. In a series of experiments the author found that those acids which were stronger had the sourer taste. 'The Action of Nitric Acid on Tribromacetanilide:' By W. B. BENTLEY. The author was unable to obtain the nitric product described by Remmers. 'Researches on the Cycloamidines, Pyrimidine Derivatives:' By H. L. WHEELER. 'Some Double Salts Containing Selenium:' By J. F. NORRIS. 'On Phenylglutaric Acid and its Derivatives:' By S. AVERY and ROSA BOUTON. 'On α-Methyl-β-Phenyglutaric Acid:' By S. AVERY and M. L. FOSSLER. J. ELLIOTT GILPIN.

THE *American Journal of Science* for June, which completes Volume V. of the 4th series, contains as its first and longest article an account of the stratification of the electric discharge in Geissler tubes, with a theory of their cause and an account of some experiments made to test it. There are short articles on geological and mineralogical subjects by Messrs. W. Lindgren, H. W. Turner, J. H. Pratt, H. F. Bain and H. S. Washington. Mr. R. G. Leavitt describes a psycrometer, and Mr. L. C. Jones the action of carbondioxide on soluble borates. The number concludes with an article by Dr. F. H. Bigelow, reviewing his recently published bulletin of the Weather Bureau on solar and terrestrial magnetism in their relations to meteorology.

Appleton's Popular Science Monthly for June contains a portrait and sketch of Andrew Crombie Ramsay. Professor Heilprin continues his account of aspects of nature in the Sahara, and Dr. G. A. Dorsey describes a cruise among Haida and Tlingit villages of the Northwest coast. Professor D. R. McAnally writes on the Roman highways, and Dr. W. L. Howard on the physiology of strength and endurance. There are two articles on scientific education and an article by Professor W. H. Hudson on veracity. In so far as the *Monthly* is 'timely' it has the courage of its convictions and publishes an article on 'Peace as a Factor in Social and Political Reform' and an editorial entitled 'A Victim of Militarism.'

THE publication of a monthly *Revista di scienza biologiche* under the editorship of Professor Enrico Morselli is announced. It proposes to cover somewhat the same field as the

American Naturalist and *Natural Science* and has the coöperation in England of Sir John Lubbock and in America of Professor J. Mark Baldwin. Subscriptions may be addressed to Dr. Paulo Celesia via Assarotte 46. Genoa.

Messrs. John Bale, Sons and Danielsson, London, announce the publication of a *Journal of Tropical Medicine* to be edited by Mr. James Cantlie, who for some years practiced in Hong Kong, and by Dr. W. J. Simpson, who was until recently medical officer of health for Calcutta.

The State Board of Health of Michigan has established a Teachers' Sanitary Bulletin to be issued monthly. It promises to contain information of great value to the teacher, and sets an example that could be followed to advantage in other States. The first numbers contains an address by Dr. F. G. Novy on 'germs, what they are, and how they produce diseases,' and an article by Dr. H. B. Baker on 'isolation and disinfection of persons and things.' The number also contains several statistical charts.

Mr. James G. Biddle, of Philadelphia, has begun the publication of a monthly Bulletin intended to be of interest to those who use scientific instruments. The subscription price is 50 cents per annum.

SOCIETIES AND ACADEMIES.

GEOLOGICAL SOCIETY OF WASHINGTON.

At the 80th meeting, held in Washington on May 25, 1898, Dr. A. C. Spencer and Dr. Geo. H. Girty read a joint paper on the Devonian in Southwestern Colorado.

In one of the early bulletins of the Hayden Survey, F. B. Meek described a small collection of fossils which had been brought in from the southwesterm part of Colorado by F. M. Endlich. The specific characters of a *Rhynconella*, which was very abundant, led him to designate the age of the limestone in which they occurred as Devonian. Some weight was added to this opinion by associated forms which were only generically recognizable. During the field season of 1897 *Rhynconella endlichi*, which has since been assigned to Camarotœchia (Plethorhyncha), was found associated with a number of forms which corroborate Meek's determination as against those who have supposed a probable Carboniferous age. The Devonian strata lie in apparent conformity with a supposed Carboniferous section.

The stratum from which the fossils were obtained is a heavy limestone about 100 feet thick. Below it there are about 50 feet of shales not well exposed and a heavy quartzite 50 feet in thickness which rests upon an eroded surface of crystalline rocks. A basal conglomerate is locally present. The following forms have been identified by Dr. Girty: *Fenestella* sp.; *Orthothetes Chemungensis? Productella* cf. *spinulicosta; Rhynchonella* sp.; *Camarotœchia* (*Plethorhyncha*) *Endlichi*; *Cyrtia* n. sp. *a*; *Cyrtia* n. sp. *b*; *Athyris* sp.; *Naticopsis gigantia? Euomphalus* sp.

The last paper of the evening was one by Mr. S. F. Emmons, on the 'Geology of Southern Russia,' illustrated by lantern slides. This included some account of Donetz Basin, which has been developed within the last ten or fifteen years, and promises to become one of the most important industrial centers of the Empire, containing large areas of coal of various kinds as well as important deposits of mercury and rock salt, together with ores of gold, silver, lead, zinc and iron as yet imperfectly developed. Some account was given of the Caucasus mountains, their geological structure and the varied races that dwell within their valleys; also of the important deposits of petroleum in the Tertiary beds along their flanks, especially of those at Bakou, on the Caspian Sea, which already rival in the amount of their production those of the United States. The enormous deposits of glauber salts in the Karabugas gulf, on the eastern side of the Caspian, their origin and their bearing upon the origin of petroleum, were also described. Likewise the peculiar conditions of the waters of the Black Sea, their greater salinity, higher temperature, contents of H_2S and entire absence of organic life below the 100-fathom level, and the points of resemblance between their condition and those that prevail in the Arctic Ocean, as found by Nansen. Finally, the interesting geological features of the Crimean peninsula, which appears to be a segment of the northern flanks of the Caucasus, left upon engulfment of the rest of this portion of the range beneath the waters of the Black Sea.