The present issue of this manual, the third in point of publication, assumes a much more important appearance than the preceding volumes, and it is evident that much thought and careful work has been brought to bear in its production. The chapters devoted to the history of copper mining, the geology, chemistry and mineralogy of copper have been revised and rewritten, the statistical tables have been added to and rendered more comprehensive, while the list of copper mines and prospects described has been increased to the number of over two thousand. We are also glad to note that the information in respect to British Columbia copper mines is more correctly stated, although with the exception of the first two and the last two mentioned properties, the other mines in this list are owned and operated by other companies or individuals, and the Jewel and No. 7 are not copper mines. Again several glaring inaccuracies still appear. Thus it is presented that the Montreal and Boston Copper Co. own the Sunset, Crown Silver, Jewel, Morrison, No. 7, Ruby, King Solomon, C. O. D., and Florence Fraction in the Boundary district, whereas the Giant Mining Company, of Rossland, is described as operating in the Yale and Cariboo district; the Yreka Copper Company, it is stated, has a "new smelter"; the Centre Star mine, Rossland, is described as producing a limited amount of copper as a by-product from silver-lead ores," and so on. We readily understand, however, the difficulties in the way of the total elimination of error in the compilation of information concerning so vast a territory; but so far as British Columbia is concerned at least, there is little excuse for mistakes in making reference to the more important mines, as official reports in such cases are readily obtainable.

Contributions to Economic Geology, 1902, by S. F. Emmans and C. W. Hayes, geologists in charge; United States Geological Survey, Washington, 1903.

This is one of the many admirable bulletins issued at regular intervals by the United States Geological Survey. The report contains sixty-one contributions from thirty-three members of the staff who have been engaged during the year in economic work. There is also a brief statement by geologists in charge of the section of metalliferous ores and the section of non-metalliferous economic minerals, of the extent and character of the economic work being carried on in the survey. The department, recognizing the need of prompt publication of intelligence obtained in the field, has issued this bulletin in advance of the regular and more comprehensive reports of the survey, the matter included being such only as have a direct economic bearing, all questions of purely scientific interest being excluded.

MACHINERY NOTES.

AERIAL TRAMWAYS IN THE LARDEAU.

MR. B. C. RIBLET, the well-known mechanical engineer of Nelson, is now installing aerial tramways at the Silver Cup and at one of the Poole mines in the Lardeau. The former, which is three miles long, is being constructed to connect the mine workings with the new concentrator. It is also stated that a tramway is shortly to be installed at the Nettie L. mine.

ZINC ORE CONCENTRATION IN THE SLOCAN.

It is reported that a plant for the concentration, roasting and magnetization of the ores containing large zinc percentages is shortly to be set up at the Slocan Star mine near Sandon. It is proposed to obtain power from Sandon Creek, and application has been already made for the right to do so.

NEW MACHINERY AT THE NANAIMO COLLIERIES.

A considerable installation of machinery and other improvements is to be shortly made by the Western Fuel Company, of Nanaimo, in connection with the operation of No. 1 shaft. Four Wilcok-Babcock boilers of 500-h.p. are now *in situ* and a new washer, elevators, etc., have been ordered. When the new washer is put in the screenings will be drawn out by a conveyor and dropped into a pocket, technically known as a bootleg, from which they will be hoisted by elevators and deposited in a bunker, nut coal in one division and the finer screenings in another. A spiral conveyor takes the screenings from the bottom of the bunker and deposits them in the washer, the cone already referred to, and which is inverted and in which arms revolve keeping the mass in motion. A powerful stream of water is forced up through the cone carrying with it all the coal and allowing all the rock to accumulate at the bottom of a chamber furnished with valves at top and bottom. When this is full the valve above is closed and that below opened allowing the rock to drop into a car which will convey it to the rock dump. The coal finds its way out at the top of the cone on to a perforated screen which allows the smaller coal and water to fall through to another screen through which nothing but the water and the sludge can escape. This latter is deposited in a receptacle and some time in the future may be conveyed to a briquette works. At present it is the by-product for which no use has been found. The nut coal and pea coal on the screens pass into conveyors and by the action of a butterfly valve are either carried on to dumps situated near the water or deposited directly in cars. The capacity of the washer is 400 tons in ten hours. When the day men quit work it is possible by a simple contrivance to stop that part of the machinery which carries the coal to the washer and operates that apparatus while allowing the filling of the bunker with screenings to go on.

THE DEMAND FOR MINE MACHINERY AT ROSSLAND.

The Rossland *Miner* remarks that the recent increased demand for mining machinery on the part of mining companies operating in that district is a significant indication of the important developments now taking place in the direction of deep-level mining. Meanwhile the White Bear Company is securing quotations on a twenty-drill compressor and a 125-h.p. hoist; the Spitzee Company has just ordered a five-drill compressor, and contemplates also the immediate installation of powerful hoisting machinery; the Green Mountain-St. Louis Consolidated intend installing at once an additional boiler and a hoist suitable for operating to a depth of a thousand feet; and two concentrators, one for the Le Roi No. 2, and the other for the White Bear, will shortly be set up. The Jumbo is also arranging for the installation of a tramway.

THE YREKA COMPANY'S NEW TRAMWAY.

The Yreka Copper Company is installing an aerial tramway over a distance of five and a-half miles from the June group of claims to salt water, on Quatsino Sound.

THE EVA STAMP MILL.

Preliminary work is now well under way for the installation of a stamp mill and other machinery at the Eva mine. The company has the right to 700 miner's inches of water from Poole Creek. A flume 4,000 feet long will convey water along the bank of the creek to a point having an elevation of 400 feet above the millsite; thence it will be brought in steel pipe to the mill. The tramway will be 4,200 feet in length and have a carrying capacity of 100 tons of ore per day. The contract demands the completion of the tramway by July 31st.

ELECTRICAL POWER AT THE SPITZEE.

The new compressor and winding plant to be installed by the Spitzee company at the headworks now almost completed will be operated by electricity. The company will consume about fifty electrical horse-power for its compressor and about thirty for the hoist. The foundations for the machinery are now being laid.

INSTALLATIONS AT MORRISSEY.

The following equipment has been ordered for the Morrissey coal mines: A tail rope haulage engine to be installed at the head of incline, above tipple, for hauling empty and loaded cars. New track scales to be placed at the head of incline for weighing cars of coal as they come out from the mine to determine the number of tons on which miners are to be paid. The old scale in tipple will not be used after the new one is installed. Two hundred additional mine cars. Part of this order has already been shipped from Toronto. A large exhaust fan, 18 feet in diameter, for the ventilation of No. 2 and No. 3 tunnels. The engine to run this big fan is already on the ground.

THE GRANBY COMPRESSOR.

The installation of the two 30-drill compressors and two 700-h.p. motors at the Granby mines is now complete and the