istic enterprise, just publisl. d a very useful and handy map of the Rainy Lake and Seine River Gold District, Ont., which is attracting so much attention as a new gold field among capitalists. The map is printed on the scale of 2 miles to the inch, and is published at $1.

Mining prospects in East Kootenay, B.C., are, as a matter of course, dull on account of the low price in silver, but discoveries are being made that indicate the district will rival West Kootenay in mineral wealth. Besides the great North Star mine, near the St. Mary's river, very promising leads of argentiferous galena have been discovered on the Moyea, near Cranbrook, and from the assays and the immense bodies of ore in sight there is no question that these mines will be exceedingly valuable when silver is reinstated in currency. The reports of the gold quartz leads at Wild Horse, near Fort Steele, are very encouraging and are attracting considerable attention.

The immensity of the operations carried on at the Witwatersand mines can be gauged from the fact that 4,046 whites and 29,500 natives are regularly employed on the mines. The average wage paid to the natives amounts to 58s. 10½d. per month on the Rand, but at Barberton and Lydenbury the average pay is much lower, only amounting to 33s. 3d. and 32s. 6d. per month respectively. A return of the stores consumed on the Witwatersrand mines during the past year places the total value at £1,428,477. By far the largest item was coal $314,127, machinery coming next with $298,255, and timber (including deals) being responsible for £109,400, chemicals $70,027, mealies (for feeding natives), £73,010.

A huge 8,000 ton forging press is now in use at the River Don works of Messrs. Vickers, Sons & Company, Sheffield, England. The shareholders, at the close of a recent meeting, were invited to inspect the working of this machine, and, it is stated, an ingot weighing 66 tons was taken from the furnace and conveyed to the press, under which it was swiftly and silently squeezed to the required proportions. When finished it will be 18in. thick and is ultimately, we understand, to form one of the plates of the Russian warship Three Saints.

The Schlesische Nickelwerke is now preparing to erect works for the extraction of nickel from the ores. It is expected that the construction and arrangement of the plant will take about 18 months. This company owns several mines near Frankenstein, and in 1891 began working the Benno and Martha shafts, from which 1,160 metric tons of nickel ore had been taken up to the end of 1893, carrying from 1·5 per cent. to 4 per cent. of nickel. The Benno shaft is now 170·5 feet deep, and so far the nickel contents of the ore have increased gradually with depth. The work of exploration is to be continued on an extended scale.

Diamonds are still down despite all the efforts of that powerful combination, the De Beers Consolidated Company, to manipulate the market to their own advantage, and the explanation of the depression is said to be a decreased demand for the precious stones in America. The Americans are credited with absorbing, in normal times, one-third of the total output of diamonds, but the effect of commercial depression has been felt in the States as elsewhere, and has restricted the demand for such luxuries. It was expected that the unfavorable state of the market for diamonds would seriously affect the De Beers returns, but Mr. Cecil Rhodes, at the last annual meeting of the company, at Capetown, on July 17, was able to tell shareholders that the usual dividend would be paid. The company had, he said, reduced their obligations by £700,000, and had increased the value of the reserves of blue earth on the floors to £4,000,000, besides maintaining a reserve of £700,000 in Consols. The company spend £100,000 per month in South Africa, and are now using local coal.

A new form of prospector's stamp battery specially designed for use in rough country is described in the last issue of the Australian *Mining Standard*. The patentees are Melbourne mining engineers. The improved stamp mill weighs complete 230 lbs., the heaviest piece being 40 lbs.; the whole when in working order being only 3 feet 10 inches high by 16 inches wide and 12 inches deep. It can be readily taken to pieces and carried by men or packhorse. The machine is of the best mechanical design, very simple, and specially constructed to stand rough usage, the principal parts being of wrought iron, such as the bedplate, standard, mortar box, etc., the cams and tappets of steel. The stamp crushes with ease the very hardest quartz gangue obtainable in Victoria, and reduces it to go through a screen of 144 to 196 holes to the square inch, the matter being discharged continuously as it is crushed through the screen, and is discharged or delivered all round the circumference of the stamper box. The small, or No 1 mill, as now made, is a *one man machine*, but the principle can be applied to the largest type of stamp battery, and it is claimed by the inventors to solve the difficulty of crushing ore dry by stampers, whilst getting a rapid and continuous delivery of the material as it is crushed. It is acknowledged by all practical men that no machine has yet been introduced to transplant the stamp battery, which has been in existence since the 12th century in Germany, and the machine under notice aims at providing prospectors with a long felt want, viz., a crusher capable of reducing large samples of reef outcrops to a fine powder, either crushed dry, with water, as may be desired. A trial took place recently, and some of the hardest quartz obtainable in Ballarat was put through the machine, which needs only one man to work it, and which delivered the stuff in the form of a fine powder continuously. The powder can then be treated either by washing in a dish in the ordinary way or by Clark's patent dry process gold concentrating machine. The stamper should prove handy for prospectors desiring to test large samples of reef outcrops.

In the course of an address delivered at Nottingham College, Feb. 24th, Mr. C. M. Percy made the following observations on fan construction: Simplicity should never be lost sight of, and strength should always constitute a first consideration. These two virtues ensure what is so desirable in colliery appliances—continuity of work, and non-liability to get out of order. I have always had an objection, which has increased as time went on, to "mammoth" slow-running fans. They are cumbersome in themselves. They absorb power by the movement of themselves. They are costly to make. They occupy much space, and necessitate extensive and expensive foundations and houses. I believe that the entry of the air to the fan should be easy, which means large inlets having a clear course, not baffled by projecting arms or cones, or even blades "veed" towards the centre. The inlet should be on each side of the fan, with a central diaphragm to prevent the two currents conflicting. The passage of the air through the fan should be easy, which means that there should be sufficient and not excessive fan capacity. In open running fans the blades should be so formed that the air may pass through as nearly in a straight line as possible, and leave the circumference with as little circumferential velocity as may be, because all velocity of discharge in open running fans represents a loss of energy. This means that in open running fans the blades should have considerable backward curvature, and the number of blades should not be too great, producing by their surface excessive friction and drag upon the air. I have come to the conclusion that the inlets and the outlets, and the circumference of the inlets, multiplied by the width, and the total blade surface, should represent equal quantities, and that the circumference of the fan at any point, measured by its width at that point, should be an equal quantity. In a closed running fan the circumstances are somewhat different, because the energy of discharging air can be utilized after leaving the fan, in diminishing the pressure outside the fan, and thus expediting the delivery from the fan. The curvature backward of the blades need not, in consequence, be so great as for an open running fan. The air should be free to leave the fan at any point of the circumference, and the spiral casing all around should be continued into the chimney. But the quantity in proportion of the inlets to the fan, the passage into the body of the fan, the passage through the fan, and the discharge from the fan, should be equal, as in the open running. I believe that the sides of the revolving parts should be enclosed, preventing leakage, and only allowing discharge at the circumference. The journals and bearings of the fan should be so perfectly constructed that