

when gold is the object, are brought out clearly. Climax shows similar multiplication of cleaning stages when high-grade concentrate is the desideratum; Andes and Magma demonstrate how the millman's problem is simplified when a high-iron concentrate is acceptable to the smelter. Discharge of a tailing from the primary middling run after regrind is indicated by the T in the third column of Ajo, Con-

solidated, Britannia, and Climax. The prevalence of double cleaning is shown by the predominance of entries in the fifth column. Predominance of one-stage counterflow of cleaner tailing is apparent from the frequent appearance of the form $\frac{x}{Y}$, in columns 2-3, 4-5 and 6-7.

Regrinding effected in the primary middling circuit appears as universal in the lead-zinc plants symbolized, but

much less frequently in the copper plants.

I am at present engaged in revision of the "Handbook of Ore Dressing" and contemplate the use of this method of symbolic representation therein for recording and analyzing flotation-pulp routings. Comments thereon from the men who will use the book, either by publication or private communication, will be much appreciated.



Arrangement of sluice boxes and riffles at the property of the Ferey Mining Company, in White County, Ga.

Placer Mining For Gold Near Dahlonega, Ga.

The Ferey Mining Company has been working ground on Dukes Creek for the past three years

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FOR more than three years the Ferey Mining Company has been reworking old placer deposits along Dukes Creek, near Dahlonega, Ga. During this period it has been responsible for approximately 80 per cent of the gold produced in this State.

The mining and washing equipment consists of a dragline excavator employing a 1-cu.yd. bucket and a portable washing plant. The hopper discharges into a revolving trommel, the oversize going to a belt stacker. Under-size, with 1,000 gal. of water per minute, passes through a single sluice box to a distributing pan with guides which feed the concentrates and water evenly to a battery of six sluice boxes, each being 14 in. wide and 20 ft. long. Each box has five sections of riffles, 48 in. long, three being of $\frac{1}{4}$ -in. flat iron and $1\frac{1}{2}$ in. high set at an angle of 20 deg. Alternating with these are two sections of California-type riffles set in the same type of frame but constructed of $1\frac{1}{2}$ -in. round turned hardwood.

It has been observed that, by alternating these different types of riffles, the tendency of the sand and concentrates to pack between riffles has been lessened. The total volume of concentrates, about 4 cu.yd., obtained in the six parallel boxes is the same as was produced in the single box. This new arrangement has proved effective in catching fine gold formerly lost. It is rare to find gold in the lower third of a box.

Concentrates are moved to a clean-up plant using 24-in. revolving screen and bowl amalgamation, this being the only place where mercury is used. Two 3-in. centrifugal suction pumps, powered by a 50-hp. International kerosene engine, are used to keep the pits dry. Power for the screen is supplied by a 40-hp. kerosene engine. The water line feeds a distributor drum having two 4-in. lines, one perforated with $\frac{1}{4}$ -in. openings for spraying the gravel in the screen, and the other for feeding water to material in hopper.

Overburden is stripped off and

stacked to one side of the pit being worked, each pit being approximately 70x90 ft. with 3 to 6 ft. of overburden and a similar depth of gravel. After the overburden has been removed from part of the pit, the same dragline is employed to excavate the gravel and deliver it to the hopper. As a rule, two pits are worked before a clean-up is made. The gravel is dumped back into the part of the pit already excavated. Before the operation is abandoned, the top soil will be replaced by a bulldozer.

From 300 to 500 cu.yd. is handled in ten hours. Average gold content of the gravel, from grass roots to bed rock, is 25c. per cubic yard. Recovery is 90 per cent. Water is pumped from Dukes Creek through an 8-in. spiral pipe. Eight men, including laborers (colored), one foreman and panner, and one superintendent, are employed. T. J. Stephenson, of Cleveland, Ga., is superintendent and Sam P. Cronheim, William-Oliver Building, Atlanta, Ga., is vice-president of the company.