then is the colored individual in the woodpile? Have they a private and personal end to serve in their suggestions? If yes, then it behooves us to remember "*Timeo Danaos et dona ferentes*" and to study out the situation for ourselves. On the one hand, we have an industry well established, growing, and constantly employing more and more men On the other hand, we have some individuals who have been claiming that first one process and then another is a wonderful improvement on anything known elsewhere in the world; that, in fact, it is so wonderful that the nickel can actually be produced from the mattes without cost. If this be true, why do these gentlemen ask aid from the Government? The old commercial methods are amply sufficient. Let them work cheaper than any one else, and show that they are prepared to do the work, and they will get plenty of it to do. Until that time comes, it would be a crime to interfere with the comfort and happiness of the prosperous community now established in the nickel mining region near Sudbury.

Wilfley Table Practice.

Some months ago we called attention to the limitations of the Wilfley table, or rather of riffle washers in general. and pointed out the importance of hydraulic classification of the sands prior to feeding them to such appliances. It is interesting to note that this practice has become nearly universal in the best mills of the West. It is also noteworthy that the effort to use riffle washers in the concentration of slimes is being very generally abandoned, this finer material being treated on improved forms of buddles. In this connection it should be mentioned that in the concentrating works at Great Falls, Mont., the buddle has been made to serve a curious double function, at one and the same operation concentrating the slimes and acting as a classifier for the coarser sands, which are then sent to appropriate riffle washers. This classification is accomplished by means of a cycloid fresh water feed, which causes the sands to be rolled off to the periphery, the volume of water being sufficient for this purpose, but insufficient to produce an amount of scouring action which would disturb the slimes that have settled upon the surface of the buddle. The Wilfley tables thus take the sands thrown off from the buddles, the material sent to the buddles being the crushed jig tailings. The Wilfleys are then operated with as thin a film of water as possible, dependence being placed on the motion of the tables rather than on the quantity of water to effect separation. An important modification in the operation of the Wilfleys consists in causing the "heads" or clean concentrates to discharge from the foot of the table instead of from the side, an auxiliary water spray being used across the foot to wash the last portions of gangue down with the middlings. The capacity of a table thus operated is 10 tons per diem.

Recent Advances in the Science of Vein Geology.

The Washington meeting of the American Institute of Mining Engineers will long be memorable for a group of papers recognizing certain phenomena in ore deposition which give to that study a more correctly scientific basis than it has ever before possessed. From the researches of Sandberger with his conclusions in favor of a lateral secretory origin of most ore bodies, to those of Posepny with his brilliant argument for ascending waters as the agents of mineral deposition in veins, it is but a logical step in advance to combine the two theories, to trace in our veins the united action of concentrations laterally from the bounding rocks, and of solutions rising out of the zone of plutonic waters. The objections to Posepny's notion of a "barysphere" where the heavier minerals had been stored by separation due to gravity while the earth was plastic, whence solutions subsequently leached out the soluble portions, bringing them up only to redeposit them in lodes, were promptly and energetically made. It was generally conceded that no necessity existed for looking farther than the ordinary rocks of the earth's crust for a source of the metals which the solvent action of heated waters, containing carbonic acid, would leach out. The result then was merely an extension of Sandberger's lateral-secretion theory, applying the general principle to both the relatively cool and the relatively hot zones within which it was conceded that water could exist and circulate through the rocks.

But the conviction has more recently been forced upon students of vein geology that descending waters play an important part in forming and modifying ore deposits, and that the pecular enrichment of the upper portions of veins, rendering them valuable to moderate depths, while usually becoming lean at greater distances below the the surface, was due wholly to this hitherto unsuspected function of the downward percolating atmospheric waters. The clearest conception of this phenomenon and of its attendant circumstances, has been reached by Prof. C. R. Van Hise, and presented in an elaborate paper entitled "Some Principles Controlling the Deposition of Ores," which is only an advance statement of a still more elaborate treatment in a monograph on Metamorphism by the same author, soon to appear in a Report of the United States Geological Survey. The papers by Weed on "The Enrichment of Gold and Silver Veins," and by Emmons on "The Secondary Enrichment of Ore Deposits" are valuable additions to the same line of argument, giving concrete examples from a wide range of observation. They are furthermore peculiarly interesting as showing how other investigators have independently arrived at the same conclusions.

Following Sclichter ("Theoretical Investigation of the Motion of Ground Waters," 19th Ann. Rep. U.S. Geol. Surv.) Prof Van Hise shows how the meteoric waters descend through the rocks to the lower limit of circulation and then complete the cycle by rising through trunk channels, performing the function of dissolving and precipitating mineral matter under varying physical and chemical conditions. The theory briefly stated is as follows: "First comes the action of the downward-moving, lateral-moving waters of meteoric origin which take into solution metalliferous material. These waters are converged in trunk channels, and there while ascending, the first concentration of ore-deposits may result. After this first concentration, many of the ore-deposits which are worked by man have undergone a second concentration not less important that the first, as a result of descending, lateral-moving waters. In other cases a concentration by descending, lateral-moving waters alone is sufficient to explain some ore-deposits. It therefore appears more clearly than heretofore that an adequate view of ore-deposits must not be a descending water theory, a lateral-secreting water theory, or an ascending water theory alone. While an individual ore-deposit may be produced by one of these processes, for many ore-deposits a complete theory must be a descending, lateral-secreting, ascending, descending, lateral-secreting theory. The descending, lateral-moving, and ascending waters are alike driven by gravity. Each performs its own work."

The best examples of the effect of downward percolating waters in producing secondary enrichment of veins are those afforded by most copper deposits. The typical condition of a copper bearing vein in a region subjected to normal weathering of the rocks, where glaciation has not occurred, has been shown to be as follows: On the surface a gossan, more or less pronounced, dependent upon the conditions of moisture and vegetation, below which come more or less carbonate of copper (malachite and azurite), with minor quantities of oxide (tenorite). This condition will extend to permanent water level, and