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A MINERALOGIST'S OBLIGATION*

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Since our modern industrial society apparently creates more needs in everyday life than there are means to supply those needs, a prime goal of a people is to increase the means to supply, so that the standard of living may be raised and a happier life attained. Fundamental to this development is the raw-material of which tools and commodities are made. Men and nations have been made much more conscious of the availability of critical raw-materials in recent years. Even comparatively popular magazines and Sunday newspaper editions discuss the subject for the man on the street. The impact on him of such shortages as rubber and tin, supported by a few quoted government statistics on other shortages, places him in a receptive frame of mind to regard the solution of the raw-materials problem as a panacea to the world's present ills. Important though the raw-materials problem admittedly is, we must avoid the rationalizations which easily emerge from a cursory study of their statistics. Nevertheless, it is folly to deny the full pre-eminent importance of raw materials in the present world picture. They must remain basic to any analytical discussion. They alone do not create the higher standard of living for which, as increasing numbers now believe, the world conflict is being waged, but without them a high standard of living is not possible. Right or wrong, much respected prevailing thought is focusing on the raw-materials problem as the one which, if unsolved, may preclude any great improvement in world conditions.

Outstanding on any list of raw-materials are the minerals. And on a list of strategic raw-materials the minerals occupy a position of unique importance. Official statistics indicate that not even the United States, the most favored nation in its raw-material supply, is independent of sources beyond the national boundaries. Other countries are variously

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more dependent on imports. Our interest centers on imports not only for economic reasons but also for political and military reasons. A great many of our raw-materials are imported for the purely economic benefits of importation even though they could be produced within our boundaries. Often a very modest change in the cost differential is the only incentive that is necessary—a fact that makes the protective tariff so inviting to self-sufficiency advocates. But mineral raw-materials, with few exceptions such as the zeolites, are not produced industrially, and many of them are of value as the ultimate sources of the elements. Under these circumstances the sources of mineral raw-materials take on added interest and touch the welfare of all of us. Their political control and political exploitation have become major items of domestic and foreign policy. The details of these policies are of intimate interest not only to the society of American (or other) people but also to the individual citizen—though he may not recognize it.

It is not my purpose to review the facts of mineral distribution, which are well known to the profession except insofar as military necessity still prevents the publication of later details. The excellent government sources of statistical information will, we hope, be published up to date before long. Nor is my prime purpose to offer a different interpretation or emphasis on these statistics. Many highly competent interpretative studies are available although there is no essential agreement within any major group—technical or political—on the proper policy to adopt. Other interpretations are still so welcome that I am reminded of Berenson's prayer: "Give us this day our daily idea and forgive us what we thought yesterday." My purpose is to stress to mineralogists our almost unrecognized obligation to pass on to our fellow Americans the information we have which is our special heritage. We are peculiarly well fitted by background, training, and experience to understand, to interpret and to teach the critical facts. More than any other professional group, ours should assume the responsibility, but I have been unable to find even one major contribution in the American literature to this subject by a professional mineralogist. Surely no other phase of the study of minerals is more important to the national welfare; nor is any of greater interest to those around us. Nor, for that matter, is the field of study being neglected. There are, however, many highly technical but most important details hidden in the sacrosanct recesses of our technical literature, which can properly be evaluated and stressed by mineralogists and which are waiting for the spotlight to be turned their way. For example, the dramatic emphasis which war has thrown on the quartz crystal led to the study by Parrish and Gordon, giving information without which a purely statistical picture is incomplete. And, similarly, a statistical statement of

the world's critical tin distribution gives only a part of the story. No statement of Bolivian tin reserves or production of concentrates has full meaning in terms of the economy of tin without a statement of the complex mineralogy of the Bolivian tin ores. The ease of smelting of Straits tin places a most severe handicap on a Bolivian ore competitor as is fully reflected in the past history of tin production. Only as a war measure has the United States been able to construct its own tin smelter.

During the past few months we have heard much about American foreign policy. Loud has been the cry for an implemented foreign policy especially with regard to our mineral needs and the available supplies. Perhaps no single phase of the discussion has stirred up more intense public interest than has that part of the Atlantic Charter which offered a hope of a fair solution to the raw-materials problem. I quote the pertinent clause, number four, from the Charter: "They will endeavor, with due respect for their existing obligations, to further the enjoyment by all States, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity." This most important declaration carries great significance and promises much for the future welfare of the less-favored nations. It, together with other clauses in the charter, implies an end to this phase of economic imperialism with its concomitant selective exploitation of the world's natural resources. Immediately following the publication of the Charter public comment was highly favorable. With time, however, less-favorable comment developed and focused heavily on the difficulty of implementing clause four. Careful analysis of clause four does, I believe, lead inevitably to serious questions on the feasibility of executing its provisions. On at least two occasions Prime Minister Churchill has made public statements that have been interpreted as a wish to modify somewhat the full meaning of clause four. And recently President Roosevelt has denied the existence of a formal charter. The Charter will not easily be erased from the minds of peace-loving men. I am not now raising the question of right or wrong as applied to "the enjoyment by all States . . . of access . . . to the raw-materials of the world." I am recognizing along with others the great need for public enlightenment on these most vital facts—specifically the detailed dissemination of factual information on raw-material sources. American history indicates that the American people, once given the facts, usually have the knack of arriving at a sound conclusion. But sound or unsound, it is their inalienable right both to have the facts and to look to us for them. From such public education will arise the impetus toward a logical American raw-materials foreign policy.

Hugh Gibson, one-time ambassador to Belgium and to Brazil, recently

said on a closely related subject: "If we are to have peace and order it must be on the basis of long range planning among the principal powers. We stand alone among the great powers as a nation that can never plan more than four years ahead. . . .

"The people should be informed as to policy, not as to current negotiations, but as to aims and purposes. Without full information they cannot exercise the intelligent control of government, and our representatives will continue at the mercy of shifts of feeling.

"Shifts in public opinion inspired by emotional rather than accurate knowledge are responsible for many changes in our foreign policy."

These remarks of Mr. Gibson were intended for a wider coverage than mineral raw-materials. They are nevertheless in point.

Between peace times and war, the difference in a state's need for the access to raw-materials is mainly one of degree. The need was fully and readily recognized by Britain and the United States when the Combined Raw Materials Board was conceived in December 1941 as a war measure. It was implemented by lend-lease, doubtless both ways. It was intended that it should solve the main war-time raw-materials problems among the Allies. Its very existence is recognition of the need for the implementation of clause four, even between two countries traditionally close economically. I join those who believe that the length of the next period between wars will depend largely on the degree to which this now famous clause four is crystallized. The Combined Raw Materials Board reflects a will to international co-operation, recognized as essential during war. But an analogous willing co-operation is also essential to a lasting peace. Only by some such co-operation can the raw-materials problem be solved. Its solution is receiving growing recognition as a prerequisite to the peace we hope for.

A few selected mineral raw-materials present such a complex post-war aspect to the major powers that they are receiving immediate attention. America appears to be the main activating agent in the steps so far taken. How far toward a solution our efforts will or can go may be a barometer for other similar mineral questions. I shall illustrate by quoting a United Press report of July 14, 1944: "The forthcoming American-British oil conference will seek agreement on an American plan to establish a world oil accord, open to all nations and based on the Atlantic Charter principle of 'access on equal terms to the raw-materials of the world,' . . .

"The purpose of the accord if it is joined by all producing as well as consuming countries will be to create a world commission to recommend allocation of world petroleum on the basis of need rather than on the past basis of ability to pay." A tentative agreement has since been reached and

is in a sense a controlled cartel, somewhat similar to the pre-war rubber and tin agreements. It resembles too the interstate Oil Compact. At the time of this writing it is to be reworded to facilitate interpretation.

In the past we have depended on free trade as a means of "freedom of access to the raw-materials." An extensive literature explains why free trade has failed to satisfy the various national demands for a suitable living standard, but literally reaches no agreement on an alternative method of international distribution. Whatever means is adopted for raw-materials distribution must first stem from action by the governments of the participating nations and thus become an item of paramount importance in the foreign policy of each interested party. But we cannot stress too heavily that these foreign policies must be understood and approved by the people which those governments represent, in a truly democratic way. Failing in these respects the structure cannot stand. The consequences of its fall are now well known to us. R. L. Buell has expressed this thought in more general terms: "An enduring cooperation among nations must arise out of enlightened *public opinion* and intercourse between peoples." And again he says, "The future of the world must rest primarily upon government action and policy arising out of a vigorous and intelligent *public opinion*." (The italics are mine.) Here again, may I repeat, the mineralogist as a specialist in the most critical and strategic of raw-materials has both a privilege and an obligation to serve as few can serve.

One of the foremost problems confronting the post-war planners is that of monopolies and cartels. The history of the tin cartel has been well publicized. Some of the indirect effects of the operation of this cartel are known to us from everyday war-time experience. During the war when the oriental sources of tin have been cut off we have drawn heavily on the relatively newly developed tin deposits of the Belgian Congo. Although the details of Congo reserves and production have been officially withheld in the interest of national security, yet it is rather generally understood that these deposits are to play a prominent part in the future international economy of tin. Since Bolivian tin has been proved quite incapable of offering serious competition to the well-established British position in tin production and smelting, we find international interest focusing on such a potential competitor in the picture. A brief item in the New York Times early in 1943 quotes the London Daily Mail to the effect that Belgium may merge with the British Empire after the war, Belgium to receive thereby greater British protection. This possible union was spotlighted in the public eye by the Saturday Evening Post, December 30, 1944. Should such an event be within the realm of future possibility it is easy to conceive of the benefits to accrue to Belgium. It is

also relatively evident that Britain too would benefit from the resultant political control of the natural resources of the pre-war Belgian sphere of influence—I have in mind especially the diamond, copper, and tin deposits of Belgian Africa. If the British tin supremacy is thus to continue, what is the effect on the United States and its infant tin-smelter industry? Has the United States been able to obtain assurance of sufficient tin concentrates from the Belgian Congo to keep our newly constructed, war-time tin smelter operating after the war to satisfy a part, or all, of our tin needs?

There is much American support for the principle of monopoly and freedom of competition. Alfred Sloan, Chairman of General Motors, said in June 1944: "My own point of view is that cartels should be outlawed under all circumstances, domestic or overseas. I believe we will do better here and progress in the world generally . . . will be accelerated if competition prevails wherever business enterprise is operated."

On the other hand opposing views within our own borders hold the cartel principle as fundamental to efficient production and prerequisite to fair marketing. I select the recent remarks (January 5, 1945) of C. M. Micou before the Trade and Commerce Bar Association to express this viewpoint. Quoting from the press report: "While the international cartel issue lends itself peculiarly to the 'emotional approach,' the complicated subject is 'as susceptible to solution as any other of our numerous international economic problems.' Many of the abuses, which have been recently exposed, he said, have been revealed as abuses in the light of subsequent events. Blame, he added, has been placed on business men for the same lack of vision and failure to see the coalition of evil forces as characterized 'our national administration.'

"Although 'classic cases' yet must be proven or appraised by the courts 'in their true context,' the Department of Justice has used publicity 'in a policy of *in terrorem* enforcement.' Unless the courts or Congress intervene, he continued, dire consequences may be expected for the country's foreign trade.

"There are many exceptions to the ideal of free competition in the United States, he pointed out, citing agricultural marketing agreements, labor combinations, carriers and the Miller-Tydings Amendment limiting competition as to prices. At the same time, in foreign trade many countries encourage and some require agreements among competitive producers assuring orderly production and marketing."

Such highly important questions must become items of public concern in the planning of American foreign policy. Our elected representatives are divided in their opinions but the office of the Attorney General is adopting an anti-cartel policy. Such momentous decisions should receive

their inception from Americans such as we, but too many Americans don't know the meaning of the term "cartel," much less its possible impact on the national life. And until they do, and until they express their convictions through their representatives, our official attitude is confused. In June 1944 the New York Times editorialized as follows: "A Washington dispatch to this newspaper reports that a program for post-war handling of cartels has been recommended by technical experts of government departments. This program calls for an international agreement pledging nations to an anti-cartel policy, which, however, would recognize that international commercial agreements can serve other than restrictive purposes. The proposed agreement would include a provision for an international repository where agreements of the kind customarily made by cartels would be filed. This would be an attempt to apply the 'disclosure method' of regulation adopted in the Securities Act. . . ."

"These proposals indicate somewhat more realistic thinking on the subject of cartels than has come out of Washington heretofore. They raise the question, however, whether we should not try to clarify our own minds on the subject much further before making international proposals of this sort. . . ."

"The best way for the government to clarify its own ideas would be to appoint a commission of first rate economists without special axes to grind to reexamine the question of monopoly and competition, both in the domestic and in the international field, with regard to government policy. Not until this nation's own mind is reasonably clarified as to what our policy ought to be will it be profitable to frame specific proposals to present to other nations."

In part our motive must be a selfish one—to fulfill the requirements of the American standard of living. But we have grown greatly in our realization of the part we must play in sharing the responsibilities of the world community of nations. Wendell Willkie said in his proposed platform draft: "We know from bitter experience that the United States cannot survive militarily, politically, or economically in the modern world without close and continuing cooperation with other peace-loving nations." And from the Republican platform of 1944: "The United States must be prepared to undertake new obligations and responsibilities in the community of nations. We must cooperate with other nations to promote the wider international exchange of goods and services."

In a comparatively recent national poll 62 per cent of the American people expressed the opinion that this war is not to be the last. Is that merely a fatalistic acceptance of man's inability to get along with man? Or is it a lack of our confidence in the peace makers to see beyond their national boundaries? To win a peace is admittedly difficult.

Can we, should we, found the peace on an honest attempt at an equitable adjustment of the world's right to a fair standard of living when Germany's Goebbels can say publicly to German workers in July 1944 that the German Reich "will not have a chance to repeat this struggle for another 10, 20 or 50 years if it loses the present war." Man, being what he is, will sometimes improve his living by illegal methods if the power behind the law will permit. Are nations of men different from the men who compose them, and will they accept their fair share peacefully and without protest even though there is no enforcing power behind the allotment? Nations never have. Must we not agree with Lord Lothian that peace depends on overwhelming power behind just law? The power is now ours. The just law is still to be formulated. It awaits the crystallization of public opinion.

Americans characteristically recoil from the exercise of power—even from the display of power—as a means of maintaining peaceful relations with their neighbors. The facetious comment has been made that we prefer the policy of purchasing friendship. Suggestions alternative to the exercise of power have arisen, aimed at circumventing the need for a power-sustained peace. One of the more recent of such suggestions is that of Walter Lippmann, who proposes that the world may be divided into orbits of a sort of international communal interest. This proposal presupposes that such orbital areas are either self-sufficient or may be supplemented by mutual trade. But official statistics show that there are no self-sufficient areas. Mineral shortages transgress such areas and may be overcome only by normal trade as we understand it. The failure of such trade—as it has always failed—affects national living standards downwards. As long as the raw-materials necessary to modern living are denied to major parts of the world's populations, the ultimate sources of wars remain. My fundamental premise is that the depression of living standards through raw-material shortages is a prime cause of war.

Enlightened public opinion has been suggested as a most potent force toward permanent peace. Intelligent, responsible, and popularly supported government by the major powers is the first requisite. Raymond Clapper said pertinently: "Never overestimate the peoples' knowledge, nor underestimate their intelligence." And from the pen of Sumner Wells, relative to the Nazi control of public opinion through control of the press: "When this war is over the peoples of the earth must never again permit a situation to arise where any people shall be deprived of their inherent right to know the truth." The truth, properly taught, robs the aggressor of his momentum. But especially it places the non-aggressor on his guard. We must interest the average American in the most sensitive of all the barometers of war—mineral raw-materials shipments. The

problem is difficult, but peace is difficult. Complacent relaxation following war is the characteristic reaction of a democratic victor. It is the drop in the guard which in peace invites the retaliatory counter move on the part of the vanquished. Not even the United States—a most favored nation—could enter upon a war without stockpiling. And such stockpiling cannot be done in secrecy in any country. A public awareness of the meaning of such stockpiling could, some think, prevent the aggression.

An ingenious scheme has been proposed by Dr. C. K. Leith whereby the peace shall be maintained by withholding from the aggressor nations, because they are aggressor nations, the mineral materials which they need for military aggression. H. G. Moulton and L. Marlio oppose the method on grounds of practical execution. For a time at least, possibly even for one generation, we might expect such a plan to succeed. But no matter how regarded, it is peace by the bludgeon. It is protection from the aggressor by being more aggressive than he, or at least more successfully aggressive. In other words, it is another plug to the same old world volcano. It is power-sustained peace and carries all the evils of such a peace. It is suppression and intimidation of the vanquished—be good or we'll cut off your supplies—whereas at least one of our war aims is human freedom and equality of access. It is of course better than no solution at all in that it offers temporary quiet, but it is far from air tight. National aspirations are irrepressible, and will lead any rationed nation to misappropriate for military needs a part of its allotted raw-materials, thereby creating a civilian scarcity. Such scarcity, translated into a lowered standard of living, has long been an adequate cause of war.

This statement is not intended to deny that the next international peace must be maintained by an adequate force just as is domestic peace. But the power used, to be effective without causing reverberations, must be one that plucks the fangs without otherwise harming the well being of a defeated nation—it must not lead to the deprivation of the citizenry, to a lowered living standard.

A pre-eminent proposal, though not a very new one, suggests a super-state—international power to supervise the peace. It is of course a league of nations in a new cloak. Its greatest strength lies in its freedom from interference with world trade—in fact, if it functions as the league did it will actually promote international trade. It recognizes the interdependence of the several peoples of the world. It will stimulate collaboration and help to integrate our economic life with that of other countries.

Henry R. Luce has said: "We Americans must first of all come to some basic agreements among ourselves as to what, concretely, we are prepared

to do and to undertake. Our discussions must be frank and free. They will, to be sure, be overheard by all the world. And some of us sometimes may give offense to other peoples. But the worst offense which we could commit against the rest of mankind would be to arrive at victory without any common conviction among ourselves as to a program to which we would be willing to dedicate the power and influence of our nation."

Whatever the chosen solution, it is of paramount importance that it meet with popular approval, not alone with the approval of our leaders. It must be a central principle of our foreign policy and must be concerned heavily with the exchange of raw-materials without which no nation can thrive as each has a right to thrive. But popular approval can come only through extensive public enlightenment. Our duty is clear, our responsibility is well defined. The few who have pioneered so well and so far cannot alone complete the task. It is a mineralogist's obligation.

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