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Turgot's *Brief on Mines and Quarries*: An Early Economic Analysis of Mineral Land Tenure[†]

Turgot's little known *Brief on Mines and Quarries* was published in France in 1764¹ and is probably the first economic analysis of the efficiency of a form of mineral-bearing land tenure. Turgot advocated granting mineral rights to the first occupant. His analysis is far superior to the one made by Adam Smith in his *Lectures on Jurisprudence* supporting the granting of mineral rights to the surface owner through accession.² Though Turgot's arguments were discussed during the sessions of the Constituent Assembly which preceded the adoption of the French Civil Code in 1804, the latter, in article 552, adopted the accession system of land acquisition.³ The French mining law of 1810, however, did not favor Turgot's proposition and reverted to the regalian right tradition of the French Old Regime.⁴ The regalian right tradition is a system through which mineral concessions are granted unilaterally and conditionally by the state.⁵

Turgot wrote the *Brief* while serving as Superintendant of Limoges, in response to a request made to him by the Marquis de Mirabeau, the father of one of the leaders of the French Revolution.⁶ The Marquis asked for the renewal of a concession for a period of eighty years, over the lead mine of Glanges located in the province of Limousin. Turgot wrote a

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1. 2 OEUVRÉS DE TURGOT, MEMOIRE SUR LES MINES ET CARRIERES ET AVIS SUR LE RENOUVELLEMENT DE LA CONCESSION DES MINES DE PLOMB DE GLANGES 356-404 (G. Schelle ed. 1914) [hereinafter cited as TURGOT].

2. A. SMITH, LECTURES ON JURISPRUDENCE 28 (R.L. Meek, D.D Raphael & P.G. Sein, eds. 1978).

3. Legoyt, *Mines*, in DICTIONNAIRE DE L'ECONOMIE POLITIQUE 178-88 (C. Coquelin & Guillaumin eds. 3d ed. 1864).

4. *Id.* at 181-82. Legoyt is perhaps too sanguine about the regalian right interpretation of the law of 1810. See Carpentier & Frerejoutant du Saint, *Mines, Minieres, Carrieres*, in 27 REPERTOIRE GENERAL ALPHABETIQUE DE DROIT FRANCAIS 776 (1898).

5. Regalian right is "the right that the entire State, represented by the King, reserves to itself to dispose of the ownership of the underground as if it were public property, independent of the private property of the land which contains it, and to dispose of it for the greatest advantage of society." Regina v. De Lery, Que. C.S. (1883) (quoting HERON DE VILFOSSE, DE LA RICHESSE MINERALE 6, at t. 1 (1810)). It must be emphasized that under the French Old Regime, the regalian right doctrine applied to all mines and not just to gold and silver mines, as is already clear in the ordinance of Charles VI (1413). See *id.*

6. TURGOT, *supra* note 1, at 355.

draft of a judgment for the case and a draft proposal for an edict for the benefit of the Parliament.⁷

The mode of mineral bearing land tenure that Turgot criticized in his *Brief* is the concession system which existed in France from the Middle Ages (at least from the ordinance of Henri II in 1548 and, to some extent, the ordinance of Louis XI in 1471) to 1791.⁸ The concession was a unilateral act of the state granting to someone the exclusive ownership of the underground of a tract of land forever or for a limited time period conditional upon uninterrupted mining activity.⁹ In case of interruption, the concession became void and the concessionnaire lost all rights not only to the mineral already found, but also to the sunken investments.¹⁰ The concession could be granted, and mining works could actually be undertaken, without the consent of the surface owner, who was entitled to compensation for damage only.¹¹ Extraction of metal from a concession was subject to a ten percent royalty in favor of the state.¹² The concession

7. Parliaments, under the French Old Regime, had the right not only to pass judgment on specific cases but to draft edicts and regulations as well. These edicts and regulations were applicable only within the jurisdiction of the parliaments and were subordinate to the king's authority. See 2 E. CHENON, *HISTOIRE GENERALE DU DROIT FRANCAIS PUBLIC ET PRIVE* 362 (1929); A. ESMEIN, *HISTOIRE DU DROIT FRANCAIS* 593-95 (11th ed. 1912).

8. The ordinance of Louis XI in 1471, called Ordinance of Montil-lez-Tours, grants to the surface owner a preferential but conditional right of exploiting the mines located under his tract of land. The preferential right is conditional upon conveying the information about the existence of mineral deposit to the crown and authorization after assessment of the owner's expertise and financial resources by the Master General Superintendent of Mines. Otherwise, the exploitation and exploration rights are granted to all and the land under which mines are located is subject to rights of way (free mining). The ordinance of Henri II in 1548 assigns to the king the exclusive right to dispose of the mines. The beneficiary does not have to compensate the surface owner except for damages to the surface. It is worth noting that these ordinances were never revoked and were often formally upheld even though they were modified from time to time. For the texts of the ordinances of the kings of France, see ISAMBERT, *RECUEIL GENERAL DES ANCIENNES LOIS FRANCAISES* (1822).

The Law of 12 July 1791 allowed the surface owner to extract minerals up to a depth of 100 feet. A concession was required to dig deeper and was granted preferably to the surface owner. See J. PERSONNAZ, *DROIT DES MINES* 13 (1958).

9. The concession granted by Henry II to the Sieur de Roberval in 1548 was for nine years. See Carpentier & Frerejouan du Saint, *supra* note 4.

Under article 21 of the ordinance of Henri IV (1601), the concession was perpetual if the terms of the concession were respected. See unpublished legal opinion dated 1950 given by E. Asselin in the matter of the ownership of the underground oil located in Anticosti Island, Quebec. Information on this case was provided to the author by J.P. Lacasse, professor of civil law at the University of Ottawa.

The edict of 1722 reverted to temporary concessions. See Carpentier & Frerejouan du Saint, *supra* note 4.

10. TURGOT, *supra* note 1, at 377-78, 380-81.

11. *Id.* at 399.

12. The royalty which goes back to the Roman Empire was maintained in France during the Middle Ages and was upheld by the ordinance of Charles VI (1413) against the pretenses of the nobles who had been pocketing the royalty. Sometimes the king would permanently or temporarily exempt certain persons from this royalty, as did Henry II with the Sieur de Roberval for a period of nine years; or he would exempt certain substances such as coal, iron, etc., as in the edict of Henri IV (1601), exemption later recalled and then reestablished. See unpublished legal opinion dated 1955 given by J. Charpentier in the matter of crown rights in oil fields which may be found on lands granted in Canada under the French Regime (communicated to the author by J.P. Lacasse).

system did not work well in France. Concessions were often too large, and the rights of the surface owner and those of the concessionaire too ill-defined. The territorial limits of the concession were often imprecise; neighboring concessions could actually overlap. Litigation was, therefore, frequent¹³ and unbridled speculation was widespread.¹⁴

Turgot advocated that the concession form of mineral land tenure be abolished and replaced by a system assigning mineral rights to the first occupant.¹⁵ In order to understand some of Turgot's arguments in favor of the first occupant system of mineral land tenure, one must remember that he was a physiocrat.¹⁶ For the physiocrats, only land and its extension, water, were productive because they yielded a "net product."¹⁷ Turgot, however, did not consider mines as being productive because ". . . a mine produces no fruit. The mine itself is the garnered fruit."¹⁸ Physiocrats opposed all forms of monopoly as well.¹⁹

Turgot proposed five economic arguments in favor of abolishing the concession system. He proposed other arguments, more legal in nature, in favor of assigning mineral rights to the first occupant rather than to the surface owner (accession) or the state (regalian right). This article focuses on Turgot's economic arguments.

Turgot argued that the concession system should be abolished because the concession system is an obstacle to competition.²⁰ Exclusive own-

13. Legoyt, *supra* note 3. See PERSONNAZ, *supra* note 8, at 13. In personal correspondence with this author, A.D. Scott pointed out that frequent litigation does not constitute an indictment against a tenure system. Actually, ". . . the spate of lawsuits is what would be expected when a new system of tenure comes in."

Given that the concession system was established in France in 1548 at the latest, and abolished in 1791, and given that Legoyt's assessment was made in the 19th century, the objection does not apply. Moreover, mining cases were heard exclusively by the King's Council, and not by the courts. MATTHIEU, in his CODE DES MINES, said of this procedure:

There, laws were modified by particular decisions; credit, favor, intrigue were responsible for obtaining and revoking successively the same concessions, and the Constituent Assembly, when it dealt with the relevant part of the legislation, was convinced that mines had become the prey of courtiers gambling with the rights of the surface owners as well as the ones of the inventors.

(quoted in Regina v. De Lery, *supra* note 5).

14. See Legoyt, *supra* note 3.

15. TURGOT, *supra* note 1, art. IV of edict proposal at 369-70, 403.

16. A physiocrat is

a follower of a French physician and economist Francois Quesnay who in the 18th century founded a system of political and economic doctrines based on the supremacy of natural order and emphasizing the powers of nature as the source of public wealth and national prosperity and the only proper source of public revenue and the necessity for governing so as not to interfere with the natural laws which affect the relations and processes of society and industry.

WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1707 (Gove ed. 1976).

17. I G. WEULERESSE, LE MOUVEMENT PHYSIOCRATIQUE EN FRANCE: 1756-1770, 227-79; Crabbe, *The Contribution of L. C. Gray to the Economic Theory of Exhaustible Natural Resources and its Roots in the History of Economic Thought*, 10 J. ENVTL. ECON. & MGMT. 197 (1983).

18. TURGOT, *supra* note 1, at 392.

19. See WEULERESSE, *supra* note 17; Crabbe, *supra* note 17.

20. TURGOT, *supra* note 1, at 401.

ership, instead of being granted upon the whole underground of a tract of land, should be limited to the veins actually being worked, to the extracted mineral, the works, the wells, and the galleries.²¹ Only the product of the miner's work should be withdrawn from competition through exclusive ownership and should be considered personal property of the miner.²² Turgot asserted that the mine workings and products should belong to the one who has actual possession of them, and should not be considered an accessory to surface ownership.²³ Granting mineral rights to the surface owner would not yield any advantage to the parties involved, but would only discourage extraction since the surface owner may not be interested in or qualified to extract the mineral. The exclusive property rights granted to the holder of the mineral rights, moreover, should be perpetual in order to eliminate the entrepreneur's risk resulting from tenure uncertainty.²⁴ The perpetual character of the property rights and the restriction of those property rights to the veins, minerals, and works, rather than their extension to the whole underground, would assign a redeeming value to those rights. Here Turgot showed a keen economic intuition because it has only recently been proven that uncertainty of tenure leads to a reduction of the mining assets' value.²⁵

Turgot rejected the attempt to justify ownership of the whole underground on the basis of economies of scale and the non-exclusive (public good) character of mineral exploration information.²⁶ He believed that the large investment required for mining operations constitutes a sufficient barrier to entry on a given mineral tract.²⁷ Here again, Turgot's reference to information externalities which attract too much mining effort and to the capital intensive nature of mining activity acting as a barrier to entry demonstrated a sharp economic intuition.²⁸

Turgot's second economic argument focused on the consent of the surface owners. Turgot asserted that the consent of the surface owners should be required for mine openings, and the terms and conditions of that consent should be determined by contract in order to encourage competition among the prospective parties.²⁹ Turgot considered the risk

21. *Id.* at 403, arts. IV, V, and VI of edict proposal.

22. *Id.* at 370-71. "However, the said entrepreneur will not be able to claim any exclusive privilege, or follow up on the banks or veins of the said matters beyond the diggings that he actually would be carrying out." (art. 6 of edict draft proposal).

23. *Id.* at 392.

24. *Id.* at 403, art. IV and V of edict proposal.

25. Long, *Resources Extraction under the Uncertainty about Possible Nationalization*, 10 J. ECON THEORY 42-53 (1975).

26. TURGOT, *supra* note 1, at 377-78, 382-85.

27. *Id.* at 382.

28. On exploration information externalities, see R. GILBERT, *THE SOCIAL AND PRIVATE VALUE OF EXPLORATION INFORMATION IN THE ECONOMICS OF EXPLORATION FOR ENERGY RESOURCES* (S.B. Ramsey ed. 1981).

29. TURGOT, *supra* note 1, at 403, art. III of edict proposal.

of nuisance possession by the surface owner as minimal.³⁰ Indeed, a contractual agreement will always be within the reach of the prospective holder of mineral rights if he is willing to pay to the surface owner a sufficiently high price. The prospective holder of mineral rights is able to blackmail the surface owner because, in case of disagreement, he could locate his mine openings on neighboring tracts whose surface owners would be more accommodating.³¹

Third, Turgot proposed that the holder of mineral rights must have the right to extend the mine workings to neighboring tracts without prior authorization of their surface owner. The holder of the mineral rights, however, must compensate neighboring surface owners in case of damage to their lands.³² This third policy, Turgot asserted, would encourage economies of scale and prevent irregular workings.³³

Turgot further suggested that payment of royalties on the mineral to the state should be abolished, except on iron.³⁴ Mining activity whose opportunity cost is the cost of importing minerals would be encouraged and would lead to a decrease of mineral imports. In any case, royalties bring little revenue to the state.³⁵ Turgot thought that royalties paid to the state were too high for the then current level of profits in mines. He argued that profits must include a reward for risks above the profits required to reward the considerable investment of mining.³⁶ This is especially true when the royalty is levied on the metal itself. An additional reason for not taxing mines is that mines do not yield the "net profit" of the physiocrats because they are not productive.³⁷

Turgot's last economic argument is in accordance with physiocratic policy, and asserts that authorizations and formalities which limit access

30. *Id.* at 386-87.

31. *Id.* at 372-73, 385-87.

32. *Id.* at 403, art. I of edict proposal.

33. *Id.* at 373. A.D. Scott, *supra* note 13, pointed out that the right of extension leads to inefficiency. This is certainly true if one looks at it from the property rights point of view since it is a logical consequence of the first occupant system. However, if one takes into consideration the economies of scale argument as well, one is faced with a second best problem which, as usual, is inconclusive about piecemeal removal of inefficiencies. See J.J. LAFFONT, *COURS DE THEORIE MICROECONOMIQUE* 139 (1983).

34. TURGOT, *supra* note 1, at 403, art. VII of edict proposal. Turgot does not make clear the reasons why he wants to maintain royalties on iron. According to the ordinance of 1601, article 2, sulfur, saltpetre, iron, ochre, oil, coal, slate, plaster, and stones used as building material or for millstones were exempted from royalty. The *ratio legis* is that the exemption gave an incentive to surface owners to exploit the mines themselves and, thereby, encourage mining activity and competition with foreign mines. See Asselin, *supra* note 9. Turgot, a physiocrat, could hardly quarrel with this objective. In 1773, Turgot reversed his position on iron royalties in his last work, the *Letter to the General Comptroller About the Stamping of Iron*, in which he advocates the abolition of all duties on iron. See TURGOT, *ECRITS ECONOMIQUES* 383 (B. Cazes ed. 1970).

35. TURGOT, *supra* note 1, at 394-97.

36. *Id.*

37. *Id.*

to minerals should be eliminated. Development of minerals should be available to as many interested parties as possible.³⁸

Turgot accepted the separation of ownership of the underground mineral estate from that of the surface estate as recognized by traditional French jurisprudence supporting the regalian right. However, instead of granting the underground property to the state, as is customary with the regalian right, he recommended granting mineral rights to the first occupant and provided legal support for his proposition.

Mineral rights ownership should not be granted to the state (regalian right) because the state does not have access to the underground without going through the surface, thereby encroaching upon the private property rights of the surface owners. Historically, mineral rights were attributed to the state³⁹ for fiscal reasons and in the interest of a too narrowly-defined public security. The argument which justifies granting the ownership of vacant lands to the state because the lands are "res nullius" cannot, therefore, be applicable to mineral land.⁴⁰ Moreover, the regalian right encroaches upon the right of the surface owner to dig into his own land. Furthermore, accession cannot be justified because the surface owner is unable to exert possession over the underground; the unextracted minerals are not the product of his work. Diggings done underground by a third party do not generally damage the surface and, because the surface owner cannot detect the diggings, he cannot prevent them.

The Marquis de Mirabeau obtained his eighty year concession.⁴¹ Turgot's position in favor of granting mineral rights to the first occupant got virtually no support at the Constitutional Assembly.⁴² Mirabeau, the son of the Marquis, opposed Turgot's position on the ground that "it would make of the mines an inextricable maze."⁴³ Mine development would be haphazard and a constant source of disagreement which, in turn, would lead to the law benefiting the one in least need of legal protection. Mirabeau, the son, defended on rather ideological grounds the regalian right which was eventually adopted in the French mining law of 1810.⁴⁴

The fundamental weaknesses of the first occupant system of mineral rights tenure escaped Turgot. The ownership of mineral rights granted to the first occupant is, indeed, a form of open-access resource leading to an excessive level of exploration and extraction as well as to "skimming,"

38. *Id.* at 403, art. I and VIII of edict proposal.

39. *Id.* at 369.

40. *Id.* at 369-70. A *res nullius* is an object originally not owned by anyone and whose ownership can be acquired only through possession or occupation. See JURIS-CLASSEUR CIVIL, art 713, MODES DIVERS D'ACQUERIR LA PROPRIETE DES BIENS SANS MAITRES.

41. TURGOT, *supra* note 1, at 404.

42. Legoyt, *supra* note 3.

43. *Id.*

44. See PERSONNAZ, *supra* note 8; see also *supra* note 5.

i.e., the early abandonment of the extraction of the lower grades of minerals.⁴⁵ Few countries have adopted the first occupant system for mining. Lawyers have tended to reject it on the grounds that the system does not offer guarantees for the technical or financial competence of the mining entrepreneur and that it creates risk of conflict and forceful possession.⁴⁶

45. A.C. FISHER, RESOURCE AND ENVIRONMENTAL ECONOMICS: NATURAL RESOURCES AND THE ENVIRONMENT IN ECONOMICS 63-67, 86-89 (1981).

46. 5 J.P. LACASSE, LA PROPRIETE DES MINES EN DROIT QUEBECOIS, JUSTINIEN 22-40 (1965). M.D. Dalloz calls the first occupant system "impracticable." See Dalloz, *Mines, Minières, Carrieres*, in 31 REPERTOIRE DE LEGISLATION, DE DOCTRINE ET DE JURISPRUDENCE 606 (1854).