The Relations of State, Science, and Private Forestry in Hungary

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THE RELATIONS OF STATE, SCIENCE, AND PRIVATE FORESTRY IN HUNGARY.

ZOLTAN MAYER (SOPRON).

The article on Hungarian Forest Policy, by Mr. J. Hunter Blair, published in the "Quarterly Journal of Forestry" for October, 1927, mentioned with approval the system in Hungary under which the state exercises a measure of control over all the country's woods and forests, whether they actually belong to the state forest authority or not. It occurred to the writer that readers of the Journal might be interested in having a more detailed account of the enactments dealing with this subject. If he is able to show some of his British colleagues that other things in the country between the Danube and the Tisza are worth seeing, besides the "gubjas" and the "csardas," he will feel that his trouble has been rewarded.

The foundation of the rational management of Hungarian forests was laid by the Law No. XXXI. of 1879, subsequently amended by the Law XX. of 1898.

By the first enactment forests were differentiated on two separate grounds; first, according to the conditions of locality and, second, according to the ownership.

Where the conditions of locality are such that the forest prevents the formation or extension of landslips or avalanches of stone or snow: where its destruction would endanger the security of roads, or the productiveness of the adjacent country: in all these cases the forest is classified as *Protection Forest,* and clear-cutting or uprooting of trees is absolutely prohibited. The classification is carried out by the Minister of Agriculture, after a consultation between the owner and the public authority concerned. On the Hungarian plain there are to be found great tracts of drifting

sand—not unlike the sand-dunes found in maritime countries such as Great Britain—which to a large extent are kept under control by means of afforestation, false acacia and Austrian pine being the species principally used. The law prohibits the destruction of these forests, and it also prohibits the destruction of forest where the soil is permanently unsuited for use as an agricultural subject—as meadow, arable, pasture, vineyard, etc. These three types of forest form the category that has to be *unconditionally maintained.*

Turning to the question of ownership, the law drew a distinction between the forests where the owner's rights are absolute and unrestricted : and those where he is to be looked upon as the usufructuary of the wood-capital, under the obligation of maintaining it intact for his successors. In these cases the forests were classified as forests *of limited transaction* and the category was taken to include woods belonging to the following types of owner :—The State, municipalities, etc., the Church, the former villeins, public and private foundations, joint-stock companies, entailed estates, co-operative societies.

For these forests the law prescribed the obligation of management according to a systematic working-plan approved by the Minister of Agriculture. In addition the owner is compelled to employ a forest officer and an adequate staff of forest guards. The forest officer has to be a man of recognised technical attainments, who has qualified at a university. The forest guards must be men who have passed the forest guard examination. The aim of the working plan is to summarise the principles and procedure calculated to preserve the productiveness of the soil; and to stabilise, or if possible increase, the quantity and quality of the growing stock, and so guarantee a regular and definite income to the owner. It also prescribes the numbers of technical staff and forest guards required to ensure enlightened management.

While this law trespasses to a large extent on private rights, there is no question but that it has effected an enormous improvement in Hungarian forestry. Nor is there any hostility to it on the part of the forest proprietors. On the contrary, they have appreciated the advantage of

a secure and expanding income, and the other benefits afforded by scientific management. Owners compelled to employ trained professional men have tended to increase their number beyond the limit prescribed; while owners on whom the law imposed no such obligation have spontaneously entrusted their forests to men of the same type. Before the war, 70 per cent. of Hungarian forests were managed by forest engineers—as the technical officers are termed—though the legal obligation was not operative in more than 64 per cent.

In the case of some of the smaller forests, comprising a few hectares* only, principally the woods belonging to villages and to the former villeins, the entire administration was taken over by the state. In these cases any work the performance of which requires a professional qualification, is carried out by the state forest administration—surveys, map-making, preparation of working plans, fixing of annual yield, mensuration, etc. To the owner is left the free disposition of the forest revenues, the guarding of the forest, and the performance of the manual work required. The scheme was given a favourable reception by the minor proprietors and has saved many hectares of wood that would otherwise have fallen a victim to indolence or greed. The division of responsibility has not proved in practice a source of difficulty. A particularly interesting example of state-management is to be seen in the 4,000 hectares of wood belonging to the town of Szeged. Here enlightened administration by the state has formed a flourishing and productive forest on a wilderness of drifting sand.

The success of the system of dual control must be ascribed in large measure to the tactful policy of the Hungarian forest officers. In framing working plans, it has always been their aim, while if necessary protecting the interests of the wood against the owner, to put the question of profits in the forefront. They have made the owners feel that administration under a scientific working plan is in their own interests; and this is true not only of the private forest officers, but also of the Royal Förstinspektors. The carrying out of the law has thus entailed a minimum of friction.

* A hectare is 2.471 acres.

At the same time the state has the power to enforce its measures of control in cases where that is necessary. Fines are laid down for owners who cut more than the working plan allows, who neglect to carry out the measures of afforestation prescribed, who drive cattle to pasture in a prohibited area, etc.

Pre-war Hungary, however, included (besides the forests for which management under a working-plan was obligatory, the protection forests, and the forests unconditionally to be maintained), a considerable area—some 30 per cent. —that lay within the free disposition of the owners—*forest of free transaction,* as it is called. This freedom of the proprietor to cut and not replant in certain cases was gradually reducing the total area of forest in the country.

The peace treaty that followed the war entailed a complete reversal of Hungary's position so far as forestry is concerned. Eighty-four per cent. of the forests was handed over to the succession states—Czecho-Slovakia, Roumania, Jugoslavia, and (to a minor extent) Austria. As Professor Lesenyi has pointed out*, Hungary had to change from an exporter of timber to an importer. Instead of exporting 1,200,000 tons of wood in a year, she now imports 2,700,000 tons. In this new Rump-country† it was essential that every step possible should be taken to maintain such reserves of timber as still remained. Thus an enactment was passed making it illegal, even in woods of free disposition, to sell more than 200 cubic metres of timber without first obtaining the permission of the state forest authority. Furthermore, no land registered as forest at the time the enactment was passed may be utilised for any other purpose, except with the authority's permission. Any such permission is only given, as a rule, when the proprietor undertakes to afforest an area of vacant ground in exchange for the area that he is denuding.

Even this drastic interference with private rights has aroused very little opposition. The great majority of forest

*" Die ungarische Forstwirtschaft " in " Erdészet; Kiserletek."

†" Rumpf-Ungarn "—a body from which the members have been removed.

owners take a keen interest in their woods. They become members of forest societies, and in many cases are content to fell less than the quantity allowed by law, so as to allow their wood capital to increase. Another sign of the interest and intelligence of the forest owners is to be found in the increase in the numbers of forest officers and guards since the war in proportion to the total acreage of wood. Even taking into account the large area of woodland for which management by forest officers is not compulsory, there is to-day one forest engineer to every 3,000 hectares of forest.

One other respect may be mentioned in which the private owner co-operates with the state. But a few words of preliminary explanation may be required. In pre-war Hungary 70 per cent. of the forests was managed as high forest under a regime of clear-cutting and artificial regeneration. In Hungary, as in other countries, this mechanical system of management was beginning to have serious consequences, particularly in the deterioration of the soil. It had become clear that a transition to natural regeneration was desirable. Under the direction of Professor Gyula Roth, the Royal Hungarian Station of Forest Researches conducted various experiments in this direction. At the same time experiments were made to test the different methods of thinning and tending forests. The site of this experimental research work was an area of 200 hectares in the state forest administration of Likavka, and the results attained in the ten years preceding the war were of very great interest to all students of forest science. Unfortunately, the treaty of Trianon deprived Hungary of Likavka, and it also deprived her of the vast tracts of mountain forest of which the conditions at Likavka were typical. The comparatively small area of forest which Hungary was allowed to keep, shows great variations of locality. The silvicultural methods adopted vary accordingly, and it is necessary to have not one research station but many. Most of these have been formed in private forests and are maintained by the proprietors: a circumstance that indicates both the readiness of the private proprietors to co-operate with the state forestry department, and their prescience in recognising the value to themselves, of the work carried out by Forest Research Stations.

The forest owners who have offered and are maintaining research stations are the following :—

Count Geza Széchenyi, Erdöcsokonya.
Count Bortalan Széchenyi, Röjtök.
Count László Károlyi, Füzerradvány.
Count Károlyi's Entail, Parád.
Francis Prince of Bavaria, Pornóapáti.
Baron Paul Inkey, Tharos.
Bishopric of Vesprém, Farkasgyspü.
Royal Hungarian Public Foundation, Pécsvárad.
City of Sopron.
City of Kecskemét.
City of Pécs.

At these research stations experiments of all kinds are being carried out. The heavy thinning system is being compared with the light thinning, and the various methods of natural regeneration are receiving a trial—Eberhardt's wedge-cutting, Gayer's group felling, Wagner's strip felling, etc. As a result of the experiments and of Professor Roth's untiring advocacy of the new methods, these are making rapid headway. Even in the woods of free transaction managed by the owners the principles of natural regeneration and of heavy thinning are being adopted to an ever-increasing extent. Prejudices are still felt by the older school of foresters, while enterprising merchants have brought some discredit upon the doctrine of heavy thinning by trying to persuade owners of privately-managed forests to thin out the most valuable trunks and leave the rubbish !

In addition to the work of the Station of Forest Researches it may be mentioned that considerable light has been thrown on the problem of natural regeneration as a result of pioneer investigations into the chemistry of the soil carried out by the Royal Hungarian University of Forestry at Sopron. Its chief, Professor Dr. Fehér, has proved by extensive experiments, that from the point of view of two important silvicultural factors—the nitrobacterial content of the soil and its carbon-dioxide production—natural regeneration is greatly to be preferred to artificial.

APPENDIX.

Changes caused by the dismemberment of Hungary.

No.	Quality of the wood.	Area. 1917.	Area. 1926.	Lost from area of 1917 per cent.	Left	Proportion of the whole of the wooded area. 1917.	Proportion of the whole of the wooded area. 1926.
		Hectares.				per cent.	
	I. According to quality of soil.						
1	Protection forests	327,344	11,619	96.5	3.5	4.4	1.0
2	Forests on driftsand	120,966	105,284	13.0	87.0	1.6	9.0
3	Forests on unconditional forest soil	6,024,271	701,863	88.3	11.2	81.4	59.9
4	Forests on not unconditional forest soil	926,932	353,214	61.9	38.1	12.6	30.1
	II. According to the species of trees.						
5	Oak forests	1,947,653	601,864	69.1	30.9	26.3	51.3
6	Beech and other broad leaved forests	3,665,836	515,730	85.9	14.1	29.6	44.0
7	Coniferous forests	1,786,025	54,386	97.0	3.0	24.1	4.7
	III. According to ownership.						
8	State forests	1,181,204	48,777	95.8	4.2	15.9	4.2
9	Municipal and town forests	462,061	54,570	88.2	11.8	6.2	4.7
10	Village forests	784,077	9,987	98.7	1.3	10.5	0.9
11	Forests of church corporations and persons	480,069	156,880	67.3	32.7	6.5	13.3
12	Public foundation forests	81,973	22,201	72.9	27.1	1.13	1.9
13	Private foundation forests	5,444	—	100.0	—	0.07	—
14	Entail forests	546,532	171,145	68.7	31.3	7.5	14.6
15	Forests of the former villeins	715,797	91,234	87.3	12.7	9.7	7.8
16	Forests of the joint-stock companies	123,927	10,788	91.5	8.5	1.7	0.9
17	Forests of the co-operative societies	335,195	13,662	95.9	4.1	4.5	1.1
	Total of the forests under §17	4,716,249	578,934	87.7	12.3	63.7	49.4
18	Forests of free transaction	2,683,265	593,037	77.9	22.0	36.3	50.6
	IV. According to the management by forest officers.						
19	Under the management of state forest officers	3,333,558	225,695	93.2	6.8	45.1	19.3
20	Under the management of private forest officers	1,443,574	374,906	74.0	26.0	19.5	32.0
21	Not obliged to be managed by forest officers	2,622,382	571,379	78.2	21.8	35.4	48.7