

a satisfactory means of stream control, and the other defects remained. Finally in 1882, after 18 years of agitation, the work of torrent control was placed upon a new basis by the law at present in force.

All Interests Considered.

The Forest Service still remains responsible for the work of stream control. Works are undertaken only where soil erosion has begun. The projects of the Forest Service are examined by a government commission on which local interests are represented and the boundaries of the area within which remedial works were large, and the formation of revenue bearing forests was an integral part of the scheme. Now an effort is made to restrict to a minimum the area upon which works are conducted, and on this restricted area to undertake intensive work, not only plantations to fix the soil and check the run-off, but also engineering works to break the descent of the water and support the banks and beds of the torrent. Large areas of forest are being established only in the lower Cevennes.

The works conducted by the State are carried on only on land belonging in fee simple to the State. Should there be within the area necessary for the control of a stream land owned by bodies and persons other than the State, one of two courses is adopted.

Taking Private Lands.

The State may buy or expropriate the necessary land. The right of expropriation is rarely exercised. The State acquires by friendly agreement the land on all streams where the public interest in the control of the stream is paramount.

The owner of the land, whether a private individual or a community, may retain the property upon condition that an agreement is made to conduct within a term of years fixed by the Forest Service under the supervision of the Forest Service the improvement works necessary. Com-

munities usually avail themselves of this privilege, and in such cases both the State and the departments in which the community is situated make money grants equal together on the average to one-half or two-thirds of the cost of the work. The State also assists with advice, and in the case of reforestation with seed and plants.

The law also names certain mountain communities in which, because of their important effects on stream flow, pasture lands must be treated according to conservative regulations in order to prevent destruction of the sod cover by over-grazing. Any ordered management of mountain pastures has been strenuously opposed by the mountain population, even though the object of all such regulation of use is the improvement of the pasture. Money grants have been made by the State, and assistance has been given freely in all cases where private individuals or communities have shown a disposition to protect mountain pastures. Nevertheless, the opposition still persists. A commission was appointed in 1910 to study better means of improving conditions and amendments to the law were under consideration at the outbreak of war.

Developing Specialists.

The French Forest Service in vigorously taking up the responsibility placed on it by the law of 1882 has led the world in works for torrent control. Foresters and engineers have co-operated in checking the destructive headlong plunge of waters from the Alps, Cevennes and Pyrenees. Half a century of experience, dating from the earlier laws, has led to the growth in the Forest Service of specialists in stream control, who have developed several well-defined methods of accomplishing their object.

The reforestation of the catchment areas of the torrential streams and their tributaries was in the early years the only means adapted for the control of water-flow. Even now, although in certain conditions it has been found necessary to rely on engineering works