

on these points, I would point to the Swinley Woods under the charge of Mr. Menzies, and portions of the New Forest under Mr. Cumberbatch, which may challenge comparison with any oak plantations of the same age on the Continent; but I do think, and am sure that any who have studied the subject and made themselves thoroughly acquainted with it by personal observation will agree with me, that, compared with most of the German States, we are behindhand as regards the systematic and scientific management of forests on a large scale, and as a part of political economy to which it is incumbent on a Government to attend. In fact, looked at in this light, I venture to affirm that we are as far behind Germany in the knowledge and application of scientific forestry, as we are in advance with regard to agricultural pursuits.

Large State
forests not a
necessity in
England.

I grant that for England, State forests are not a necessity (although I am not sure that we may not some day regret their absence or limited extent), for she can command the market for timber, burns comparatively little firewood, has a very small area, almost every acre of which is of great value either for building or agricultural purposes; and, from the many large estates which exist throughout the country, and the naturally luxuriant growth consequent on a moist climate, is, on the whole, well wooded, although for the most part the woods are grown for luxury (*e.g.*, enhancing the beauty of the landscape, affording cover for game), and not merely regarded as timber-producing areas.

Again, private enterprise and intelligence effects a great deal more with us than on the Continent, where Governments are still often looked to to originate and take the lead; and we often drift, so to speak, into the right channel without exactly knowing how or why.

I would therefore merely venture to remark as to Government or State forest management in England, that where it does exist no efforts should be spared to make it as perfect and lucrative as possible, and I am convinced that this can only be done by the introduction of a thorough system of rotation and periods, based upon carefully-prepared measurements, valuations, and working plans, forming a definite plan of operations with certain objects in view, and not mere desultory planting, liable to interruption at any time by a change in the Government or Commissioner of Woods, or on the *ex parte* statements of the commoners, whose rights should be definitely settled in one way or another.

Necessity of
State forests on
a large scale in
India.

In India, however, the position is quite different. Not only is there a large and ever-increasing local demand, to meet the wants of a population of upwards of 200 millions, in the shape of building material and firewood, a demand which can never be met from abroad, but we have to consider such questions as climate, rainfall affecting the irrigation and cultivation of thousands of acres, and supply of wood fuel to the railways, any curtailment or enhancement of price in which, means greatly increased working expenses and consequent loss to Government.

In India the people still look to Government for everything, and will do so for many a year to come, and there is little or none of that peculiar form of private enterprise which will plant and conserve forests on scientific principles, introduce better methods of felling and converting timber, and look into and provide for the future and its wants. All this devolves on the Government, and particularly so, I consider, with regard to forests, which must be regarded and managed as a whole, and with regard to the general good, and cannot be left to the individual caprice of private individuals or even communities; for trees do not grow in a few months or a year, like rice or corn; nor can one portion of a forest be managed like a field, without reference to the surrounding tract. Most of the larger forest tracts are, besides, in the hands of the State as assessed or unassessed waste, and will, if properly administered, form a great and ever-increasing source of strength to the rulers of the country.

The German
system modified
according to
circumstances,
suitable for
India.

The Government having granted, by the gradual formation of a distinct forest service, the necessity of establishing a system of forest conservancy, and administering and working the forests by degrees on more well-defined principles and to the best advantage, the question naturally presents itself, Where are we to look for a model or precedent on which to work? and the reply appears ready. To Germany, where forestry, and particularly the management of forests by the State, has been carried on for hundreds of years. Not the mere planting of a few hundred acres here, or reserving a few thousand acres there, but a general system of forest management, commencing by a careful survey, stock taking, definition and commutation of all rights and servitudes, careful experiments in the rate of growth, the best soil for each description of tree; in fact, in every branch of the subject, and resulting in what we find to-day, in Hanover, for instance,—hundreds of thousands of acres mapped, divided into periods and blocks, and worked to the best advantage both with regard to present and future, and the annual yield of which now and for many years to come is known and fixed to within a few hundred cubic feet.

The great difference in climate and local conditions between India and Germany would doubtless necessitate important modifications and deviations from the plan pursued in the latter country at each stage in the development of our forest system, but I can see no reason why the broad principles of organization and forest management should not be applied with success to our Indian forests, not hastily, or without careful preliminary experiment, but very gradually, feeling our way both as regards the best mode of treatment for the several classes of forest, and the wishes and interests of the people and State.

Definition of
State and com-
munal forests;
their demarca-
tion, survey,
and settlement
absolutely
necessary.

I would commence by the definition of what constitute State and communal forests, which should then be demarcated and surveyed, mapped, and valued, divided into blocks and complexes, and working plans prepared for their management. Since I have studied the matter in Germany, this appears to me the very foundation and essence of good forest management, as by these steps we arrive at a definite plan and fixed idea of the objects in view, and how best to arrive at them, so that the management ceases to be desultory and personal, varying widely according to the views of the forest officer in charge, the district collector, or even the subordinates of the revenue and forest departments. One very important matter to be settled, one which has, in fact, I may say, formed the stumbling-block hitherto in Madras in all our attempts at dividing the forests betwixt the State, the communities, and individuals, is that of rights and servitudes; and I think that what I have seen and learnt on this subject alone during my tour in Germany repays the trouble and expense, even had I learnt nothing