soil. Altogether no other country in Europe of equal extent has so great a wealth of species as Spain. According to the *Prodromus Floræ Hispanicæ* of Willkomm and Lange (completed in 1880), the number of species of vascular plants then ascertained to exist in the country was 5096.

Spain may be divided botanically into four provinces, corre­sponding to the four climatic zones.

In the tableland province (including the greater part of the Ebro valley) the flora is composed chiefly of species characteristic of the Mediterranean region, generally of species confined to the Peninsula. A peculiar character is imparted to the vegetation of this province by the growth over large tracts of evergreen shrubs and large herbaceous plants belonging to the *Cistineæ* and *Labiatæ.* Areas covered by plants of the former group are known to the Spaniards as *jarales,* and are particularly extensive in the Mancha Alta and on the slopes of the Sierra Morena, where the ladanum bush *(Cistus ladaniferus)* is specially abundant ; those covered by plants of the latter group are known as *tomillares* (from *tomillo,* thyme), and occur chiefly in the south, south-west, and east of the table­land of New Castile. In the central parts of the same tableland huge thistles (such as the *Onopordum nervosum),* centaureas, artemisias, and other *Composilæ* are scattered in great profusion. From the level parts of these tablelands trees are almost entirely absent. On the lofty parameras of Soria and other parts of Old Castile the vegetation has an almost alpine character.

The southern or African province is distinguished chiefly by the abundance of plants which have their true home in North Africa (a fact easily understood when we consider the geologically recent land connexion of Spain with that continent), but is also remarkable for the occurrence within it of numerous Eastern plants (natives of Syria and Asia Minor), and plants belonging to South Africa and the Canaries, as well as natives of tropical America which have become naturalized here (see below under *Agriculture).* In this province the maritime parts of Malaga and Granada present scenes of almost tropical richness and beauty, while, on the other hand, in Murcia, Alicante, and Almeria the aspect is truly African, fertile oases appearing in the midst of rocky deserts or barren steppes. A peculiar vegetation, consisting mainly of low shrubs with fleshy glaucous leaves *(Inula crithmoides,* &c. ), covers the marismas of the Guadalquivir and various parts of the south-west coast where salt-marshes prevail. Everywhere on moist sandy ground are to be seen tall thickets of *Arunolo Donax.*

The Mediterranean province is that in which the general aspect of the vegetation agrees most closely with that of southern France and the lowlands of the Mediterranean region generally. On the lower slopes of the mountains and on all the parts left uncultivated the prevailing form of vegetation consists of a dense growth of shrubs with thick leathery leaves, such as are known to the French as *maquis,* to the Italians as *macchie,* and are called in Spanish *monte bajo,@@*1 shrubs which, however much they resemble each other in external appearance, belong botanically to a great variety of families.

The northern maritime province, in accordance with its climate, has a vegetation resembling that of central Europe. Here only are to be found rich grassy meadows adorned with flowers such as are seen in English fields, and here only do forests of oak, beech, and chestnut cover a large proportion of the area. The extra­ordinary abundance of ferns (as in western France) is likewise characteristic.

The forest area of Spain generally is relatively small. Tho whole extent of forests is estimated at little more than 3 millions of hectares (71/2 million acres), or less than 6 per cent. of the area of the kingdom. Evergreen oaks, chestnuts, and conifers are the prevailing trees. The cork oaks of the southern provinces and of Catalonia are of immense value, but the groves containing this tree have suffered greatly from the reckless way in which the product is collected. Among other characteristic trees are the Spanish pine *(Pinus hispanica),* the Corsican pine *(P. Laricio),* the Pinsapo fir *(Abies Pinsapo),* and the *Quercus Tozza,* the last belonging to the slopes of the Sierra Nevada. Besides the date- palm the dwarf-palm grows spontaneously in some parts of the south, but it nowhere makes up a large element of the vegetation.

The Spanish steppes deserve a special notice, since they are not confined to one of the four botanical provinces, but are found in all of them except the last. Six considerable steppe regions are counted:—(1) that of Old Castile, situated to the south of Valladolid, and composed chiefly of hills of gypsum ; (2) that of New Castile, in the south-east (the district of La Mancha); (3) the Aragonese, occupying the upper part of the basin of the Ebro ; (4) the littoral, stretching along the south-east coast from Alicante to the neighbourhood of Almeria; (5) the Granadine, in the east of Upper Andalusia (the former kingdom of Granada); and (6) the Bætic, in Lower Andalusia, on both sides of the valley of the Jenil. All of these are originally salt-steppes, and, where the soil is still highly impregnated with salt, have only a sparse covering of shrubs,

mostly members of the *Salsolaceæ,* with thick, greyish green, often downy leaves. A different aspect is presented by the grass steppes of Murcia, La Mancha, the plateaus of Guadix and Huescar in the province of Granada, &c., all of which are covered chiefly with the valuable esparto grass *(Macrochloa tenacissima).*

*Fauna.—*The Iberian Peninsula belongs to the Mediterranean subregion of the Palæarctic region of the animal kingdom, a division which includes also the north of Africa. The forms that betray African affinities are naturally to be found chiefly in the south. Among the mammals that fall under this head are the common genet *(Genetta vulgaris),* which extends, however, pretty far north, and is found also in the south of France, the fallow-deer, the porcupine (very rare), and a species of ichneumon *(Herpestes widdringtonii),* which is confined to the Peninsula, and is the only European species of this characteristically African genus. The magot or Barbary ape *(Inuus ecaudatus),* the only species of monkey still found wild in Europe, is also a native of Spain, but the only flock still surviving, on the rock of Gibraltar, has often been on the point of extinction, and has to be renewed from time to time by importations from the north of Africa. Of the mammals in which Spain shows more affinity to the fauna of central and northern Europe, some of the most characteristic are the Spanish lynx *(Lynx pardinus),* a species confined to the Peninsula, the Spanish hare *(Lepus madritensis),* and the species mentioned in the article Pyrenees. The birds of Spain are very numerous, partly no doubt in consequence of the fact that the Peninsula lies in the route of those birds of passage which cross from Africa to Europe or Europe to Africa by way of the Straits of Gibraltar. Many species belonging to central Europe pass the winter in Spain, especially on the south-eastern coasts and in the valley of the Guadalquivir. Innumerable, for example, are the snipes which in that season are killed in the latter district and brought to tho market of Seville. Among the birds of prey may be mentioned, besides the cinereous and bearded vultures, the Spanish vulture *(Gyps occidentalis),* the African or Egyptian vulture *(Neophron percnopterus),* which is found among all the mountains of the Peninsula, the Spanish imperial eagle *(Aguila adalberti),* the short-toed eagle *(Circactus gallicus),* the southern eagle-owl *(Bubo atheniensis),* besides various kites and falcons. Among gallinaceous birds, besides the red-legged partridge, which is met with every­where on the steppes, there are found also the *Pterocles alchita* and *P. arenarius* ; and from among the birds of other orders the- southern shrike *(Lanius meridionalis),* the Spanish sparrow *(Passer cyaneus),* and the blue magpie *(Cyanopica cooki)* may be singled out as worthy of mention. The last is highly remarkable on account of its distribution, it being confined to Spain while the species most closely allied to it *(Cyanopica cyanea)* belongs to the east of Asia. The flamingo is found native in the Balearic Islands and on the southern coasts, and occasionally a stray specimen is to be seen on the tableland of New Castile. Other birds peculiar to the south are two species of quails, the Andalusian hemipode *(Turnix sylvatica),* confined to the plains of Andalusia, the southern shearwater *(Puffinus cinereuts),* and other water-birds. Amphibians and reptiles are particularly numerous in the southern provinces, and among these the most remarkable are the large southern or eyed lizard *(Lacerta ocellata),* which sometimes attains 3 feet in length and is very abundant, the *Platydactylus saccicularis,* the. grey amphisbaena *(Blanus cinereus),* the European pond-tortoise *(Emys europæa),* aud another species, *Ernys siegrizii.* Insect life is remarkably abundant and varied. More than 350 species of butterflies, many of them endemic, have been counted in the province of Madrid alone. Besides the ordinary European scorpion, which is generally distributed in southern Europe, there is another species, the sting of which is said to be still more severe, found chiefly in the basin of the Ebro. Trout abound in the mountain streams and lakes, barbel and many other species of *Cyprinidæ* in the rivers of the plains. For the sea fauna, see under *Fisheries* below.

*Extent.—*The total area of the mainland of Spain, according to the calculations of Strelbitsky, is 495,612 square kilometres or 191,365 square miles, that of the Balearic Islands 4982 square kilometres or 1923 square miles, and that of the Canary Islands, which, though belonging geographically to Africa, are admin­istratively associated with the kingdom of Spain, 7611 square kilometres or 2939 square miles ; so that the total area of the kingdom is 508,205 square kilometres or 196,225 square miles. This total agrees pretty closely with that in Justus Perthes’s table given below (Table II.), although considerable differences will be observed in the areas assigned to the mainland provinces and the two island groups respectively. The length of the coast-line of the mainland, according to Strelbitsky, is 2662 miles, which is equivalent to 1 mile of coast for every 72 square miles of area, about the same proportion as in France. The greatest length from north-east to south-west is 420 miles.

*Territorial Divisions and Population.—*For administrative pur­poses the kingdom of Spain has since 1833 been divided into forty- nine provinces, forty-seven of which belong to the mainland.

@@@1 As distinguished from monte alto, the collective name for forest trees.