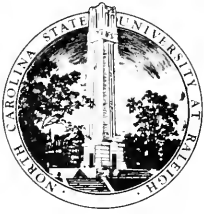




RAMBLES ON THE
RIVIERA

EDWARD STRASBURGER

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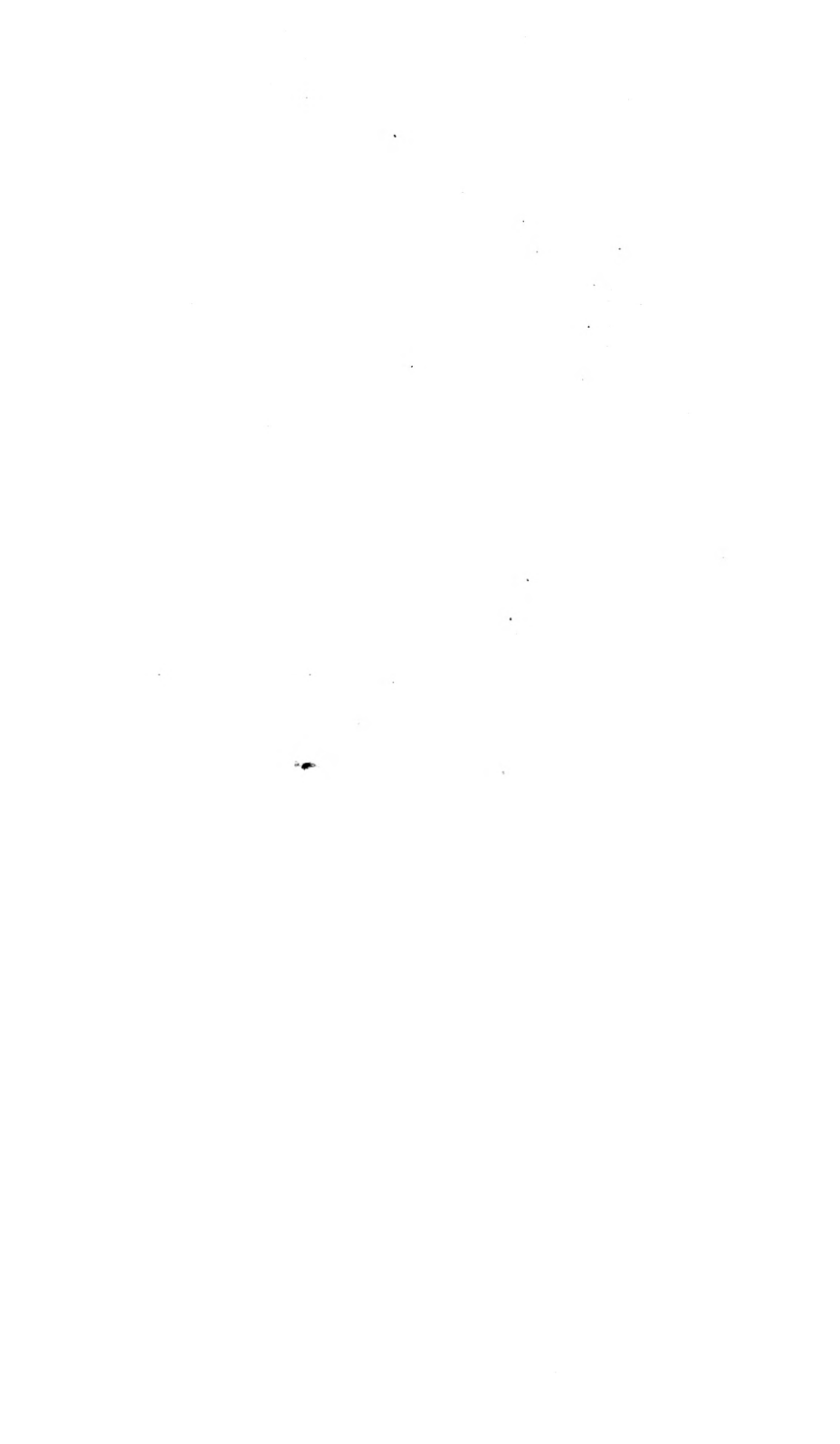


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RAMBLES ON THE RIVIERA



RAMBLES ON THE
RIVIERA

BY

EDUARD STRASBURGER

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TRANSLATED FROM THE GERMAN BY
O. AND B. COMERFORD CASEY

WITH 87 COLOURED ILLUSTRATIONS BY
LOUISE REUSCH

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DEDICATED TO

SIR THOMAS HANBURY

K. C. V. O., F. L. S., etc.

OF LA MORTOLA, ITALY.

TRANSLATORS' NOTE.

The appearance of "Streifzüge an der Riviera" in its English garb is due to the generosity of Sir Thomas Hanbury, whose beautiful garden at La Mortola is as interesting to the botanist as to pleasure-seekers on the Riviera. The Botanical Institute of the University of Genoa and the garden of the Royal Horticultural Society at Wisley are among his many gifts to Science and to Horticulture.

The translation of Professor Strasburger's interesting book has been a pleasant task, taking us back over many familiar scenes. We hope that our English version may afford equal pleasure to the reader.

We would like to acknowledge here the friendly co-operation of the learned Author from whose revised and annotated copy this translation has been made.

O. & B. C. C.

Parkstone, April 1906.

PREFACE TO THE FIRST EDITION.

Under a grey wintry sky in the valley of the Rhine I am writing these lines which are to serve as an introduction to my "Rambles" on the Mediterranean coast. How fortunate is it that even



on the darkest days imagination can raise us up above the clouds! Even when all around is dull, fancy pictures to me with magic touch the bright southern sunshine.

I seem to look upon the blue Midland Sea with its steep, rocky shores, and in the far distance gleams the Alpine range with its diadem of snow. Mirrored in my mind are the bright Ligurian landscapes; I breathe, as it were, the aromatic perfume of the evergreen thickets (Maquis). May similar sensations of returning spring be awakened in the soul of the reader, surrounded though he be by frost and snow!

PREFACE TO THE SECOND EDITION.

It is not the purpose of this second preface to make known the frame of mind in which I wrote, but rather to explain the alteration and expansion of the present volume. The reader will be immediately struck by the numerous botanical illustrations which have been introduced into the text. These, it is hoped, will be found a great assistance to the comprehension of the plants which are described. Many of those interested in these "Rambles on the Riviera" had expressed a wish that the volume should be thus illustrated. It is a matter of congratulation to me that Miss Louise Reusch has devoted herself to this task. She has travelled on the Riviera, and there, on the spot, she has painted from Nature the pictures for this book. The beauty of these paintings proves her to be an accomplished artist; they are not only artistic, but are absolutely true to Nature. To her brush are also due the appropriate vignettes which mark the main divisions of the book. It reflects much credit on the publisher that he was willing to go to such great expense for an undertaking with which he sympathised; he has indeed placed me under a great obligation.

A comparison of the earlier with the present edition of my "Rambles" will show that scarcely a page of the former remains unaltered. Yet I have regarded it as essential to retain the original arrangement of the subject matter and the sequence of the different impressions which I received in my trips to the Riviera each spring during the last ten years. The last two sections of the book replace those earlier descriptions which were found to be no longer suitable. These new chapters were penned during visits to the Riviera in the

spring of this and of the previous year. The aim of my recent journey was to connect the earlier sketches and to unite the whole into a harmonious treatise. My articles on the Riviera, which appeared originally in the "Deutsche Rundschau", were separate impressions, each sketch complete in itself, like different pictures by the same artist. As the number of these sketches increased, I became more and more desirous of connecting them together. Thus I extended my journey this year all along the Riviera, visiting those spots which are worthy of notice on account of their beauty, and which had reason to complain of being neglected in my earlier sketches. Nevertheless these "Rambles" are not intended as a substitute for the Guide Book. Their aim is rather to direct attention to the treasures of Nature in this uniquely beautiful district: to describe some of the objects which we meet with here, and so to increase the interest of a sojourn in the South.

Alas! I have not been able to paint my last sketches exclusively in bright colours: I have been compelled to put in many a dark shadow. For the changes which have taken place of late years on the Riviera have not all been for the better; and many disagreeable impressions are beginning to interfere with the pure pursuits of the naturalist. The pleasure of one's walks on the French Riviera is now spoiled by the motor cars which throw up clouds of stifling dust, and often endanger the life of the wayfarer. In Italy this sport is not pursued to the same extent: nor is such high speed permitted as in France. Yet even on the French Riviera plenty of places are to be found, far from the beaten track, where, without let or hindrance, one may devote oneself with earnestness to the ennobling study of Nature. Dare I hope that these "Rambles" may often lead the readers to such chosen spots?

Bonn, Autumn 1903.



INTRODUCTION.

As intending visitors have frequently asked me for information about the Riviera, I will begin by giving some advice on the subject. If in good health and only anxious to enjoy the charms of Nature, you can count on finding such enjoyment at any place on the Rivas di Levante and Ponente between Spezia and Toulon. But if sufficient time is at your disposal you should extend your journey over the whole of that naturally favoured coast, beginning with the Riviera di Levante, for the grandeur of the scenery increases from east to west up to the foot of the Esterel mountains. For a visit of this kind, however, the time of year should also be considered, as the Riviera di Levante, with the exception of Nervi, still wears a wintry aspect in early spring. So that a journey undertaken in March, to include both Rivas and to extend as far as Sestri Levante, should be

begun from the western end. Nervi itself, where the mean winter temperature is but little below that of the most sheltered resorts of the Riviera di Ponente, and where evergreens abound, does not lose its charms in mid-winter. But resorts on the Riviera di Levante situated south-east of Monte di Portofino do not show the full splendour of their vegetation until the deciduous trees have burst into leaf. Foreign plants are not yet as widely distributed on this part of the coast as in Nervi and on the Riviera di Ponente; and this is partly accounted for by the fact that the protection from the north decreases gradually from Portofino to Spezia. Delicate plants therefore suffer more and more as one nears the latter place.

For people with weak chests who seek a milder climate in the South, only the most sheltered resorts on the Riviera need be considered. The following places on the Riviera di Ponente are the most completely sheltered from the north: — San Remo, Ospedaletti, Mentone, and to a certain extent Alassio also, Nice with Cimiez, Cannes and Hyères: on the Riviera di Levante only Nervi at the western end. At San Remo, Ospedaletti and Nervi the sheltering mountains approach very near to the coast. For this reason the number of walks is limited. This is especially the case at Nervi, which, however, has as a compensation a remarkably fine marine parade, free from dust, where the invalid can enjoy exceptional protection from almost every wind. Since longer walks are out of the question for him he will not feel the want of them. But it is otherwise with strong people, who would feel rather shut in here. They would be much better off at Mentone, where, though the hills stand further back, the coast is well sheltered by the mountains which rise to a considerable height. Their rugged summits tempt the pedestrian further afield, while invalids may stroll about in the valleys which radiate fanwise from the coast. The Western Riviera is drier than the Eastern, and can boast of

a greater number of sunny days, and of a smaller rainfall. This is due to the height of the mountains which shelter it. Along the Riviera di Ponente the lofty chain of the Maritime Alps rises abruptly from the coast, and the north wind which prevails in winter deposits the greater part of its moisture on them. The Apennines, which shelter the Riviera di Levante, are not sufficiently high to have this effect. On the Eastern Riviera Genoa and Spezia have the greatest number of rainy days during the winter, while Nervi has the fewest. The rainfall increases far more rapidly from Nervi to Genoa than it does from Nervi to Spezia. In point of shelter Nervi is equally favoured. As a rule the less protection there is from the north the more brisk and bracing is the air; this should be favourable to such invalids as are not consumptive. The dust is not so troublesome on the Eastern as on the Western Riviera, owing to the different nature of the material used in making the roads. The limestone used for this purpose on the Ponente is soon ground into fine dust which is easily stirred up, while the shale of the Levante crumbles into coarser and heavier particles.

Many who are not themselves consumptive hesitate to sojourn in a place which harbours many invalids. It is to the distinct advantage of Mentone that a Sanatorium has been built in the Gorbio valley which takes in such cases. So that hotels can now, without inflicting hardship, refuse admittance to them.

The whole coast between Mentone and Nice is admirably sheltered from the north. Unfortunately the land bordering the sea at this spot is largely in the hands of private owners, so that the only means of communication remaining open are the railway and the high road. Motor cars monopolise this latter, making it intolerable to invalids and interfering with the enjoyment of healthy people. Beaulieu, which is included in this district, is specially favoured, since it possesses a path, free from dust, along the

eastern side of Cap Ferrat following the sea for several kilometres. Moreover this path is so lovely that one never tires of it.

Cannes is the first place west of Nice which is sufficiently protected from the north for people with weak chests. Even here many plants begin to suffer which thrive east of Nice; and this shows that the climatic conditions are becoming less favourable. Besides, the shore of Cannes is not completely sheltered from the Mistral, and for this reason the hotels are built farther inland. They occupy the nearer hills which slope gently to the sea. Some of them are situated even as far back as Le Cannet. For the same reason Cimiez, which stands well back from the coast to the north of Nice, is now in such favour as a health resort. This spot was already esteemed by the Romans on account of its mild climate, and was a favourite winter resort with them. Hyères has deservedly lost much of the reputation it once enjoyed, for it lies at the mercy of the icy Mistral. Those who desire bracing air, invigorating exercise, and a wide range of excursions on the Western Riviera, should choose Cap d'Antibes or Bordighera for a prolonged stay: or if they prefer the Eastern Riviera, Sestri Levante. Bordighera and Sestri Levante afford ample facilities for excursions inland, while at Antibes you may enjoy delightful rambles on the hilly promontory and the rocky shore.

St. Raphaël also, on the western slope of the Esterel, deserves consideration as a spring resort. But its position is inferior to that of the other places, and it is very much exposed to the Mistral. Not till the beginning of April does the wide valley of Fréjus, which lies before us here, become spring-like. Valescure, above St. Raphaël, lies among Pine-woods overlooking the valley of the Argens, and commanding a view of the Montagnes des Maures. In favourable weather a short time may be spent here. But the climate is cool, and for this reason it was specially patronised by the Romans as a summer resort.

Excursions into the Esterel are warmly recommended to lovers of Nature. St. Raphaël or Valescure, or better still Le Trayas, form excellent starting points. Visitors to Le Trayas will be struck by the red porphyry rocks rising from the blue Mediterranean. Unfortunately, with the completion of the so-called "Corniche d'Or", this hitherto unfrequented district has become infested by motor cars. This high road, which now skirts the foot of the Esterel, is happily at some distance from the sea, so that one can still wander unmolested on the purple shore.

Lastly, sturdy pedestrians will find the Montagnes des Maures a good district for extended excursions among the evergreen woods. The "Chemin de fer du Sud de la France" follows the coast, where many a place invites one to linger. The hotels here are patronised chiefly by French people. These establishments are not always as comfortable as might be desired, but the cuisine is excellent. Several days might be pleasantly spent at Ste. Maxime and the tour continued to Hyères and Toulon, terminating at Tamaris. This latter place is connected with Toulon by local steamers. It is a small winter resort and is situated inside the roadstead of Toulon. Georges Sand once honoured it by a visit; but it is swept by the Mistral and excursions are rendered difficult because all the neighbouring hills are crowned with fortifications.

Last winter was exceedingly mild on the Riviera; there was almost uninterrupted sunshine from January to the middle of April. But this is not always the case. The spring can be very rainy, and March is often the wettest month of the whole year. But as a rule bad weather does not last long, and in any case the climate of the Riviera in spring is more endurable than north of the Alps. The sunny days of March and April on that lovely coast are beautiful beyond description, and are only too often the brightest of the whole year for us. So that, when spring approaches, an irresistible longing for the shores of the Mediterranean comes over me.

It is true that, on returning home from one of these visits, it is doubly hard when May, instead of promised delight, brings only rain and cold.

There are but few districts in Europe which enjoy so sunny a climate as does the Riviera — perhaps only Greece and parts of south and central Spain. When it does begin to rain on the Riviera the downpour is heavy, so that, strange as it may appear, the yearly rainfall in Nice is, on the average, greater than that of Paris, Berlin and even London. As much as 300 millimetres of rain has been known to fall in twenty-four hours with a south-west wind. This wind, called the Libeccio, rarely blows in winter. At this time of year it is generally the south-west and east winds which bring rain. We suffered much from the east wind, the Levant, during several of our spring visits, but the Sirocco, the south-east wind, is usually dry on the western Riviera. The Tramontane, or north wind, prevails in winter, and to it the Riviera owes its sunny climate. It is well for the traveller if this wind should continue into the spring. It is hardly to be felt in the sheltered spots of the Riviera as it strikes the sea at a considerable distance from the shore, raising big waves when it blows hard. The Mistral spreads fanwise over the Mediterranean and strikes the Ponente from the north-west. At times it blows very strongly in Nice, but with less violence in Mentone, finally dying out at Bordighera. It always sweeps the sky clear, however cloudy, but leaves it as it found it; for the clouds rapidly gather again as soon as the wind drops. In fine settled weather there is a light land breeze on the Riviera in the morning, from the cooler coast towards the warmer sea. The temperature of the land then rises with the sunshine, whereupon the sea breeze sets in, from the cooler sea towards the warmer land. It is well to be careful at this time, for the temperature of the land falls rapidly — often several degrees. At sunset also the air cools very quickly in consequence of the sudden precipitation

of dew. Many invalids feel an unpleasant chill then, which may prove injurious to them. But soon after sunset the thermometer begins to rise again and a gentle breeze blows from the slowly cooling land to the sea, which maintains a more even temperature. This current of air lasts till the next morning unless there is a change of weather. In winter and early spring the difference in temperature between sun and shade is so great that even strong people should beware of chills and not go too lightly clad. Fogs are almost unknown on the Riviera; the air is remarkably clear and, as a result, the sky is of the deepest blue. Thus on this favoured shore does Nature appear ever to wear her festal robes, and by her radiance awaken in man the deepest feelings of joy and hope.

LIST OF ILLUSTRATIONS.

At the beginning of the Preface, the Introduction and each of the five Journeys which compose this book, there is a vignette representing some particularly beautiful spot on the Riviera. Thus at the head of the Preface (p. VII) we have the varied outline of the Esterel range which so charms us from Golfe Jouan. At the beginning of the Introduction (p. XI) the chain of the Maritime Alps is depicted, as seen from the Cap d'Antibes. Then follows, as heading to the First Journey, (p. 1) a view of the old town of Antibes, with its works of defence, and the snow-clad Alps in the background. The vignette in the Second Journey (p. 151) is a coast scene of the purple rocks near Le Trayas; while that in the Third Journey (p. 215) represents the old town of Cannes on the Mt. Chevalier. At the beginning of the Fourth Journey (p. 265) is the glorious view over Mentone from the Pont St. Louis; and finally, as heading to the Fifth Journey (p. 337), we have the promontory of Portofino, with a cloudy sky and a rough sea dashing its waves against the Marine Parade of Nervi.

With one exception the plants chosen to illustrate this volume are wild. They are nearly all species which blossom in spring, and which attract the attention of even the unbotanical, either on account of their beauty of form, bright colouring, strong scent or wide distribution.

I have not figured any cultivated plants, for their names are easy to ascertain in the gardens of the Riviera.

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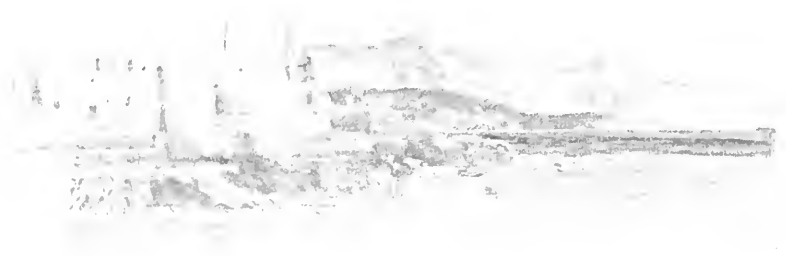
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FIRST JOURNEY.

CHAPTER I.

It was the middle of March. We expected sunny spring weather on the Riviera, and yet it rained persistently. Day and night we heard the rain beating against the windows, now heavily, now lightly, but always with wearisome monotony so that the hours seemed interminable to us. We laid our books aside disheartened. Our recreations lost interest. We grumbled bitterly about the weather. So many had hurried southwards in the confident anticipation of finding the much extolled blue sky on the other side of the Alps; and of seeing the moonlight mirrored in the Midland Sea; and now all our hopes were blighted. I, who had often spent the spring in Italy before, regarded the situation with greater equanimity. I knew that it often rained even in Italy at this time of year. How could the fields and gardens of Italy bear fruit if they were not watered in spring

and late autumn, when the greatest drought prevails during the remainder of the year?

What invariably draws me to the South in the spring, in spite of these apparently not very favourable prospects, is the longing for green fields and leafy trees, sunshine and warmth; the assurance of finding by the Mediterranean milder weather than in the North, and the hope of enjoying many sunny days — perhaps, if fortune favour, an uninterrupted series of such days. After the long, bleak, cold, northern winter the contrast is all the more agreeable. We rejoice over the scantiest verdure and welcome every ray of sunshine. On the other hand in the autumn many a dweller on the sun-burnt plains of Lombardy longs for the fresh Alpine meadows and the luxuriant forests. Autumn is usually fine in our northern latitudes; whereas our March and April are justly notorious. This was the case on the present occasion, for while letters and newspapers brought us complaints of cold and snow north of the Alps, we on the Mediterranean were before long enjoying the most glorious sunshine. By Easter the weather had become beautiful. Earth and sky assumed their festal array, and were wrapped in the brightest effulgence.

Easter Sunday found me in Bordighera. Before day-break I started to ascend the Monte Nero; but remained spellbound on the Cap d'Ampeglio waiting for the sunrise. Transfigured and spectral Corsica rose from the deep in the far distance. My enchanted gaze first rested upon it, and then wandered to the indented coast which, curving in its wide sweep, seemed as though it

would embrace the sea. The east was aglow, and the purple light tinged the crests of the steel-blue waves with its warm tones. Not a cloudlet flecked the sky, which passed from deepest blue above into tender green as it neared the sea. Suddenly the red orb of the sun rose, sending its fiery rays over the wide waters as though to kindle a vast conflagration; and a thousand rays penetrated the deep bays and dark valleys of the coast, driving away the shades of night. The houses of Monaco blazed in the distance as though on fire, and even remote Antibes threw back golden gleams as a morning greeting to the sun. The whole landscape was illuminated, and all Nature responded with a jubilant thrill. Thus on that lovely morning by the blue Mediterranean did Heaven and Earth celebrate the festival of the Resurrection.

I was lost in contemplation of this spectacle and heedless of the lapse of time, so that the sun stood high in the sky before I resumed my wanderings. The whole surface of the sea sparkled with innumerable lights as though it were sprinkled with diamonds. Distant Corsica gradually faded into a misty streak as if it had been but a vision. Before me on the Cap d'Ampeggio lay Old Bordighera, now bathed in sunlight.

The ascent of Monte Nero is said to take two hours — at least some people told me they had heard so — for in truth I did not succeed in finding anyone who could boast of ever having been to the top. Without some strong inducement the natives here hardly ever climb a mountain of any height; only one passion

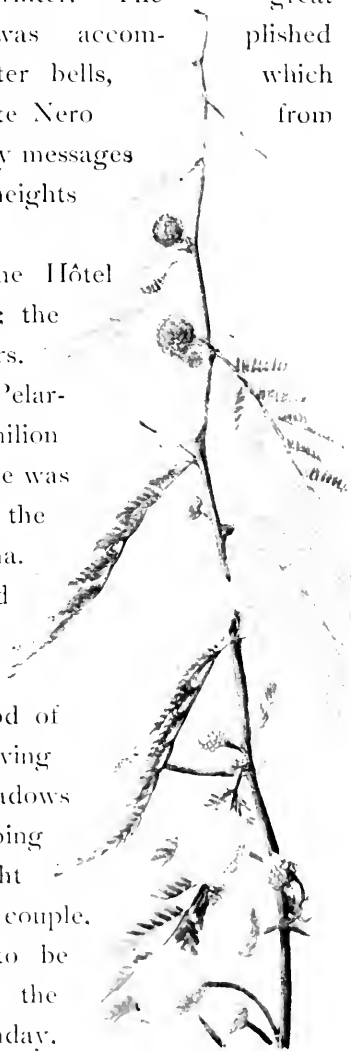
— that of shooting — will tempt them into such high regions, although they find there only small birds to satisfy their love of “sport”.

So that after vainly seeking for a companion I had to find my way alone up Monte Nero. Then it turned out after all that the summit is thickly wooded, and consequently the much vaunted view is not to be had; in fact there is no free outlook in any direction. The north slope of the mountain soon rewarded me richly for the labour of the ascent. It led me to the Col which connects Monte Nero with the much higher Monte Caggio. From this clear point of vantage the gaze could penetrate unimpeded into the deep valleys, range over undulating hills, follow the long stretch of shore, and lose itself in the distance over the sea. To the east, beyond the long slope on which rests Coldirodi, a part of San Remo can be seen; in the north-west the mighty giants of the Maritime Alps attract the eye with their snow-clad tops. The dazzling white peaks stood out with marvellous distinctness against the azure sky; while lower down on the slopes, the dark green of the Pines, whence Monte Nero takes its name, passes into the lighter green of the Olives, and merges into the luminous blue with which the endless waters of the sea close up the horizon as with a wall. There are few scenes, even in Italy, which can compare with this for beauty. This view, in truth, combines all those elements which may delight the eye, charm the aesthetic sense and rouse the imagination. But the sight of yonder Alpine snow-fields had turned the current of my thoughts

northwards. What biting cold might not prevail beyond those mountains! Here, south of their sheltering barrier, spring had triumphed over winter. The great Resurrection of Nature was accomplished and the pealing of the Easter bells, which was waited upwards to Monte Nero from the valleys, seemed to bear only messages of joy to the illuminated heights above.

The pretty garden of the Hôtel Angst was in full luxuriance; the beds resembled baskets of flowers.

The huge bushes of the Cape Pelargonium were covered with vermilion flowers, the Peruvian Heliotrope was trained up the house and filled the air with its perfume of Vanilla. Carnations, Mignonette and yellow Tea Roses added their fragrance. The leaves of evergreen trees shone in the flood of light with metallic sheen, throwing sharply-defined, dark-blue shadows on the paths. Under the drooping foliage of the Palms, in the height of bliss, sat a newly-married couple, who were fortunate enough to be spending their honeymoon by the Mediterranean. This Easter Sunday, so saturated with sunshine and so



Acacia Farnesiana.

bedecked with flowers, on which Nature had lavished all her treasures, would ever remain one of the brightest of their lives.

No fewer than four valleys debouch on the narrow stretch of coast which lies between Cap d'Ampeglio and Ventimiglia. For this reason Bordighera forms an admirable centre for excursions, which admit of great variety. The accommodation at the Hôtel Angst is so good that one willingly prolongs one's stay there. I cannot say whether Bordighera is also a suitable resort for people suffering from chest complaints. Projecting as it does into the sea it is exposed to most winds. Yet these, inasmuch as they blow across the sea, are less cold and dry than those of many resorts on the Riviera. Consequently those visitors who are in search of recuperation — and their number is increasing yearly on the Riviera — find the sea breezes of Bordighera very bracing and invigorating.

Even on a short visit to Bordighera one ought not to omit an excursion to Sasso, a small place perched on the ridge which separates the valleys of Sasso and Borghetto. The whole ramble is not more than four kilometres, whether you follow the vale of Sasso to the east of Bordighera, or go straight up past Old Bordighera and keep along the ridge. There is nothing worthy of note in Sasso itself; the place looks pretty only from a distance. Its high houses, welded together, as it were, into a single mass, their outer walls pierced only by a few windows, remind one of a fortress. And indeed these places must originally have been built to resist the attacks of pirates. Sasso looks specially picturesque when

seen from the road which runs along the ridge among old trees. After climbing the steep ascent you come quite suddenly upon this picture. On either side lie the valleys of Sasso and Borghetto, and further off that of Vallecrocchia; if you look up, the snow clad summits of the Maritime Alps gleam above the nearer hills. How often have I lingered for hours on this ridge, changing my standpoint from time to time to admire the view in different settings! Now it was a solitary and fantastic snow-palace, framed in the silvery green of the Olive trees; or the closely-packed houses of a chequered hamlet nestling in a valley; or the silver course of a sparkling stream winding its way to the sea through Oleander bushes; or Sasso, which appeared to float above the tree tops as on an ocean of verdure; till at last the wearied eye turned with longing to the restful sea. What a wealth of subjects for the landscape painter were here combined! I had to content myself with a mental image of them still fresh and vivid in its bright, sunny colouring.

CHAPTER II.

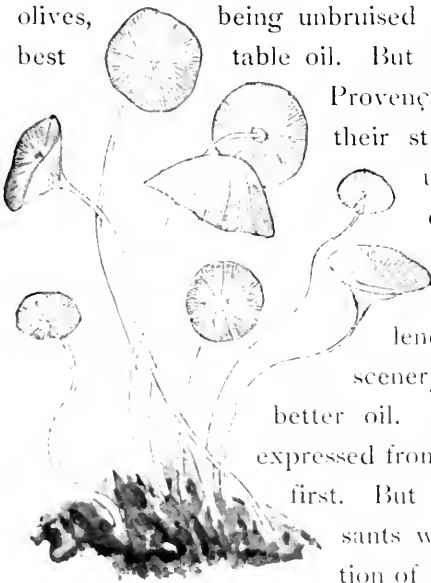
The Olive groves through which one passes on the way from Old Bordighera to Sasso, are particularly fine. There are many old and gnarled trunks, some of which develop buttress-like outgrowths near the base and look as if they were propped up. Involuntarily does one pause before these trees to admire the striking contrast between the trunks with their deep shades and the bright blue of the sea and sky. These Olive groves have a subtle charm of their own when the full moon shines over the

sea. With every breath of wind the dull gray leaves gleam peculiarly and the moon's silver rays glitter among the foliage. The moon's long path over the water seems to be instinct with life, undulating with the waves, following them in their course, and breaking with them into glittering foam on the shore.

The flowering season of the Olive is in May or June. The trees are then thickly covered with small, yellowish-white flowers, which emit a pleasant, mignonette-like perfume. These flowers remind us of those of the Privet, *Ligustrum vulgare*, a shrub which is closely related to the Olive. The unripe fruits of the Olive are green, and are therefore inconspicuous among the foliage: but as they ripen they become blue-black, and stand out distinctly, especially when the crop is good. Heavy crops are expected every five years. The aspect of the whole tree is altered when thus laden with the oval berries which peep out everywhere from among the foliage. In form and colour ripe olives are not unlike our sloes. According to an ancient custom, not now universally obeyed, the olive harvest should begin on November 21st. It lasts through the whole winter and is at its height in February and March, though when the crop has been retarded by unfavourable conditions, trees laden with fruit may be seen even in April in the higher districts. Then men and women are to be seen with sacks and baskets wending their way along the paths which lead to the Olive groves. Here the men climb up into the trees and strike the branches with long rods. The wanderer in the Olive grove hears this rattling sound on all sides, and from time to time there is the sharp crack of

a breaking bough when the stroke has been too hard. Sheets are often spread under the trees to catch the falling fruits: or else women and children squat on the ground and pick up the berries one by one, using both hands. One is astonished at the deftness of these olive-gatherers and at their ability to remain so long in a cramped position. This method of knocking down the fruit must be injurious to the trees. As far back as the first century A. D., Pliny protested against the clumsy custom. Yet how else could they harvest the olives here where the trees are of considerable height? The dense foliage and the unevenness of the ground make it almost impossible to use ladders. It is different in Provence where the trees are kept low by careful pruning in order that the berries may be gathered by hand. These hand-picked olives, being unbruised and uninjured, yield the best table oil. But how unsightly are those

Provençal Olive plantations with their straight rows of trees of uniform size. No friend of the Riviera would wish to sacrifice the lovely Olive groves, which lend such a charm to the scenery, for the sake of the better oil. A fine quality of oil is expressed from those fruits which ripen first. But in Bordighera the peasants wait until the greater portion of the olives are ripe, and by that time much of the crop



Acetabularia mediterranea.

will have fallen to the ground of its own accord. The whole is then gathered up together, and accordingly yields an inferior oil with a rancid flavour. Generally speaking, on the whole stretch of coast between Bordighera and the Esterel only oil of inferior quality is produced, such as is used for lubricating or in the manufacture of soap. The finest oil of the Riviera comes from the province of Porto Maurizio. The variety of Olive grown there is called "Taggiasca", because the romantic little town of Taggia near San Remo is the centre of its cultivation. In the south of Italy the oil of Apulia is highly esteemed. But it has not enjoyed its reputation for very long, as formerly even Apulian oil was as bad, and tasted as rancid as other Italian kinds. For in Apulia from time immemorial slovenly methods of cultivating the Olive have prevailed, and the oil presses used were so bad that an ancient model found in Pompeii was considered an improvement and actually adopted in several places.

In order to yield the best table-oil the berries must be freshly gathered and carefully selected. They are then spread out in thin layers on frames, where they are dried in the air or by artificial heat, until they shrivel. When they have lost some of their moisture by this process, they are sent to the mill where the stones are separated from the pulp, which is then placed in bast or jute sacks and carried to the press. Here the purest salad-oil, "olio vergine", trickles out. Then by the application of gradually increasing pressure the "superfine" and "fine" qualities are expressed. Once again the pulp is returned to

the oil-mill, in which the stones are also crushed. From this only an inferior kind of oil can be extracted. For a third time the oil-mill is set going and completely grinds up the sediment, which has been previously mixed with water. The oil floats on the surface of the water and is drawn off. This, being of still less value, is mainly used in the manufacture of soap. And lastly the remains of the stones and pulp are turned to account as fuel, in this land where fire-wood is scarce.

Even the purest table oil that flows from the press has to be carefully strained before it is ready for sale. It is poured into vats which are stood one above the other in a dark place. The unclarified oil in the uppermost vat finds its way out at the bung-hole, having previously passed through wadding cased in perforated zinc, and flows into a second vat, and from this, having again passed through wadding, into a third. This wadding must be changed several times in the day. From the third vat the oil runs into cisterns, which in Nice are lined with porcelain. The oil has to remain in these three months before it is bottled and exported.

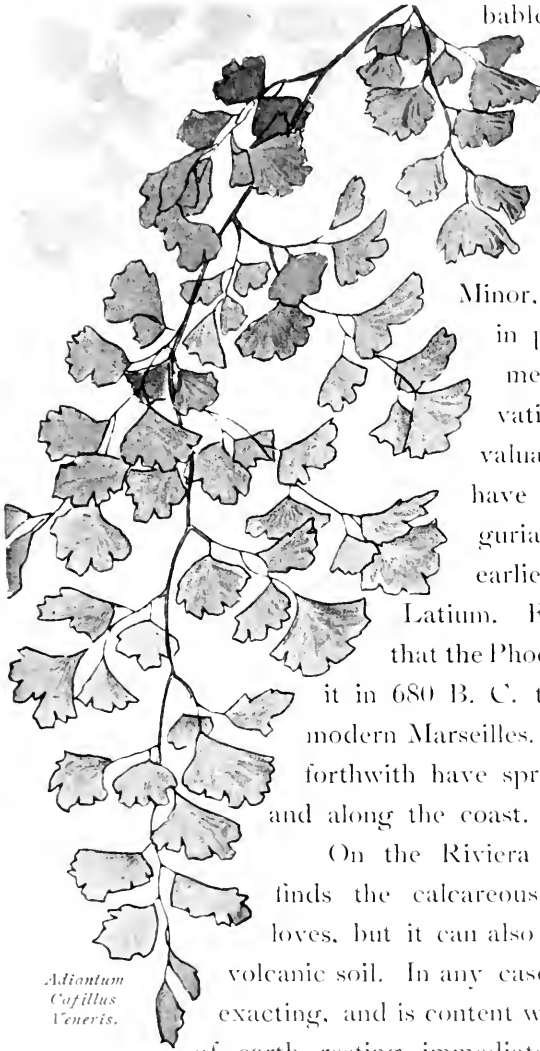
The value of each different quality of oil is fixed by a "Degustateur" (taster), whose palate is as highly trained as is that of the wine or tea taster. The Degustateur not only gives his judgment on the sorts which he tests, but he must also be able to detect adulteration by other vegetable oils.

Most picturesque are the old oil-mills which one meets with on the rushing streams in the ravines around Bordighera. Shaded by old trees and overgrown with

moss and ferns, they have an interesting and venerable appearance, Thither the small peasant proprietors of Bordighera convey their crop and pay the miller either in oil or in olives. A liquid from these mills dyes the streams brown so that the sea is discoloured at their mouths.

An old Roman proverb runs: —“*extra oleas vagari*” — to wander beyond the Olives; or, as we should say, to exceed or go beyond bounds. The meaning of this saying is explained by the ancient custom of planting Olive trees to mark boundaries.

It was said of the Olive in ancient times that it would flourish only near the sea, and that it never grew more than three hundred stadia (seven and a half geographical miles) inland. But the fact is that the equable climate which is necessary to its full development is produced by the proximity of wide expanses of water. The tree cannot stand prolonged frost. The Olive is indigenous in the Mediterranean region as is shown by the recent discovery of its leaves in the pliocene deposits of Mongardino, 18 kilometres north west of Bologna. The fact of the wild Olive being indigenous to Italy is thus indubitably established. On the other hand its introduction as a cultivated plant was comparatively late. For Pliny mentions that according to the chronicler Fenestella, there was not a single cultivated Olive to be seen in Italy in the time of Tarquinius Priscus, that is, about 580 B. C. It may well have reached Latium, however, in the time of the Tarquins as there was brisk traffic then with the Greeks of Campania. It is also pro-



*Adiantum
Cofillus
Veneris.*

bable that the cultivation of the

Olive originated in the East and spread over Egypt, Syria and Asia

Minor, reaching Greece in pre-Homeric times. The cultivation of this invaluable tree may have reached the Ligurian coast even earlier than it did

Latium. For it is stated that the Phoenicians brought it in 680 B. C. to Massilia, the modern Marseilles. Thence it must forthwith have spread both inland and along the coast.

On the Riviera the Olive tree finds the calcareous soil which it loves, but it can also flourish here on volcanic soil. In any case it is not very exacting, and is content with a thin layer of earth resting immediately upon rock.

But in order to yield heavy crops the tree requires better ground, where it can be trenched and manured at intervals of a few years. In addition to the ordinary manures,

the horns and hoofs of domestic animals, and old woollen rags are used in Bordighera for this purpose.

When wandering among the olive groves of Bordighera in the spring, care must be taken to avoid the shots of the "Cacciatori", for at this time of the year these "sportsmen" invade every grove, garden and glade in order to shoot small birds — the only game to be had. This passion has very serious consequences on the Italian Riviera, and indeed throughout the whole of Italy, for the destruction of the birds results in a corresponding increase of insects. Not only do the cheerful songsters which gladden the woods and gardens of other lands, disappear from Italy, but the number of insect pests is seriously augmented.

Dacus oleae, the Olive fly, is especially injurious, as it feeds on the pulp of the olives. It is called by the French "La Mouche", and by the Italians "Macha del Olivo". This fly lays its eggs in the very young berries; and the grubs, when they hatch, live on the maturing fruit. Should these worm-eaten olives be taken to the mill, they depreciate the quality of the oil.

From a ramble among the Olives one generally returns with a bouquet of gay flowers. For on the Riviera these spring gifts of Flora are too attractive to be hurriedly passed by. The dark-blue musk-scented Grape Hyacinths are to be seen everywhere under the trees. *Muscari comosum*, a species bearing an amethyst-coloured tuft above its otherwise inconspicuous inflorescence, is very pretty. Orchids are common among the grass, especially an *Ophrys*, one of those remarkable

species whose flowers resemble insects. *O. aranifera* reminds us of a spider, and we seem to see the outspread legs and fat body of one of these creatures. Another species of *Ophrys* is like a spider with a purplish-brown body ornamented with green. But far and away the prettiest of them all is *Ophrys Bertolonii* (Fig. p. 313). It is also so peculiar that it has at all times attracted the attention even of the peasantry. The Ligurians, when referring to it say: — “Oxletti che se spegian”, and indeed it looks as though a little green bird had settled in the middle of the flower, and bending over, was looking at itself in a mirror. This little bird has both head and beak, and even two red eyes in their proper position. Five pink petals are attached to its graceful body as wings and tail, while the mirror is borne on the sixth petal, which is of a dark purplish-red colour. This latter is much larger than the other petals, turned down and convex; it is called the lip, or labellum, of the flower. Its upper surface is velvety with the exception of a spot which represents the mirror. Here the surface is smooth and of a bright silvery grey. Scientifically speaking this little bird-like object is a remarkable development of the Gynostemium. By Gynostemium is meant that little column which, in orchids, is formed by the adhesion of three stamens to three styles. Only one stamen is fertile; its anther forms the head of the bird; the two anther-lobes the eyes; the connective projects and forms the beak. The shiny spot on the labellum is due to a reflecting layer of air intercalated in the tissue. Light is reflected from

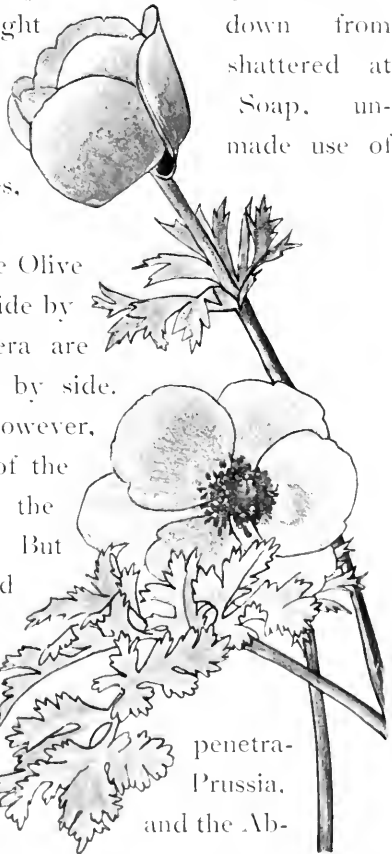
this layer as though from the metal coating of a looking-glass.

Another curious Orchid, *Scrapias Lingua* (Fig. p. 383), is often to be met with on grassy slopes of the Riviera. Its reddish-brown flowers are almost hidden in red bracts, showing only the projecting lip. The flower-lover will be delighted with a tulip *Tulipa Clusiana* (Fig. p. 407), which has white flowers striped on the outside with red. These are raised on long stalks. The rose-red blossoms of the *Gladiolus scgetum* (Fig. p. 193), which are arranged on one side of the stem, light up the fresh green of the meadows and fields. *Allium neapolitanum*, with its white flowers, gathered from the outskirts of the garden will be a welcome addition to a bouquet; for it has a pleasant perfume, although belonging to the Garlics. But it is the yellow Tazetta (*Narcissus Tazetta*, Fig. p. 301) which lends the choicest fragrance to the bouquet, while the Anemones (*A. coronaria*, Fig. p. 17, *stellata*, Fig. p. 25, and *parvina*, Fig. p. 21), supply brilliant colouring.

The culture of the Vine dates back as far as that of the Olive; hence they have always been mentioned together. In his Natural History the elder Pliny says that "Two liquids are particularly beneficial to the human body — internally wine, externally oil; both are derived from the Vegetable World and are excellent, but oil is the more necessary". When the Emperor Augustus asked the centenarian Pollio Romilius by what means he had kept himself so hale, he replied, "By wine and honey internally, and oil externally". The ancients

rubbed their bodies with oil after bathing; now-a-days oil is no longer in vogue as an external application, unless it be in the form of Marseilles oil-soap. This Graeco-Eastern use of oil survives only in the solemn anointing of a monarch and in extreme unction. In France the anointing of the Kings at Rheims was performed with great pomp well into the last century, although the vial (la sainte ampoule) of Clodwig, which according to legend was brought down from heaven by a dove, was shattered at the time of the Revolution. Soap, unknown to the ancients, who made use of oil for anointing their bodies, is a northern invention.

As in Pliny's book the Olive and Vine are mentioned side by side, so also on the Riviera are they to be met with side by side. The Olive predominates, however, in the immediate vicinity of the sea, while the Vine on the contrary shuns the shore. But it is less sensitive to cold and can therefore be grown further north. Thus in the Middle Ages the cultivation of the Vine penetrated as far north as East Prussia, and even as far as Tilsit: and the Abbeys of Uetersen and Preetz.



Anemone coronaria.

in Schleswig-Holstein possessed a few vineyards. If the Vine retreated, later on, in a westerly and southerly direction it was mainly because it was compelled to give way to more profitable crops.

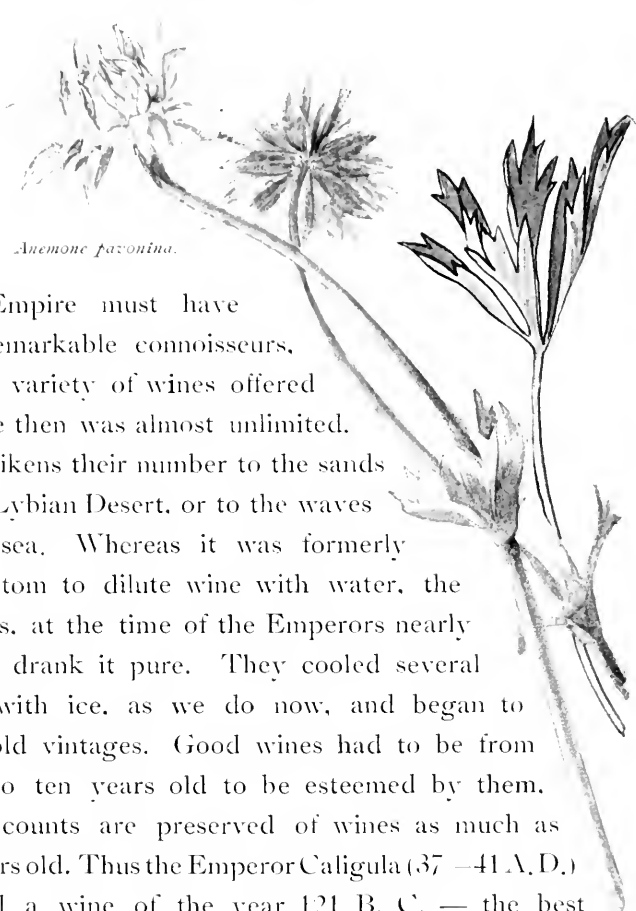
On the Riviera the Vine flowers in April. As far as climate is concerned it would here yield a rich return; but the Phylloxera, as well as parasitic fungi, have done much damage, with the result that other crops have superseded the Vine to a great extent. Hence it is that vineyards are not often to be seen in the frequented parts of the Riviera, and the wine that is made here is used mainly by the natives.

The civilised nations found the Vine also indigenous on European ground. And even today the plant seems to occur in a wild state both north and south of the Alps. It would be hard to prove that these wild plants have not escaped from cultivation. But the evidence of Palaeobotany is quite conclusive on this point. For it shows that in the Middle-Tertiary period -- the time when the brown coal was formed -- the Vine inhabited our part of the world. They were species [similar to those now living in America. Fossil remains of our present Vine (*Vitis vinifera*) occur as early as in the alluvial tufas of northern France and the travertine of Italy. At that period of our earth's development the vegetation of southern Europe already bore much resemblance to our own, although the Elephant, Rhinoceros Cave Bear and Urus had not yet been driven out of those districts by man. Moreover grape-pips have been found in the Lake Dwellings of Lake Varese -- a proof

that the Lake Dwellers of the Bronze Age were fond of grapes! It is established beyond a doubt by Engler's exhaustive researches that the wild Vine extended over the whole of Southern and a part of Central Europe before it was introduced there as a cultivated plant. At present the Vine is found flourishing luxuriantly in the districts around the Black Sea; and von Steven affirms that locally in the Crimea wine is still made from the black, acid berries of the wild Vine. Victor Hehn describes in glowing terms those fertile districts south of the Caspian Sea where thick-stemmed Vines climb to the top of the highest trees in the heart of the forest, and stretching from branch to branch festoon their summits and tempt the wanderer with their heavy bunches of fruit. Engler saw the Vine growing as a thick Liana in the dense woods of Bajukdere near Constantinople. The cultivation of the Vine seems from all appearances to have originated in the West of Asia Minor, and O. Schrader considers it highly probable that we owe its introduction to an Indo-European people.

Among the wines of the western Riviera those of Massilia were known even in ancient times. They were however without any special keeping properties and had therefore to be "smoked". This, according to Eastern and Greek custom, took place in fumigating chambers. The process was in reality identical with the present day "Pasteurisation". As today we heat the wine to at least 60° C. in order to kill the germs and thus increase its keeping properties, so the ancients subjected it to the action of hot air. From a lower chamber,

where a fire was burning, the hot air ascended through a pipe to the upper chamber in which the wine stood. The flavour of the wine could not be injured in the process as it was in well covered vessels. But what would be the flavour of that wine to which sea water had been added, while yet unfermented? This was a very common practice among the ancient inhabitants of Asia Minor and Greece. Gypsum, marble, clay, pitch and resin were also added to make the wine keep longer and to improve its flavour. Yet Pliny said that the most wholesome wine was that which contained no foreign matter, for even the strongest man must distrust such admixtures as marble, gypsum, and lime. Pliny complains particularly of the wine-trade: it had reached such a pitch that the price of wine was regulated solely according to the repute of the dealer, and that the unfermented liquor was adulterated even in the wine-press. So that, strange as it may seem, the least renowned wines were often the most harmless. The mixing of sea water with wine is recommended by Pliny as very wholesome. His warning to those who do not wish to grow stout reminds one of a new and well-known cure, which consists in drinking little or nothing at meal time. By decoctions and infusions of herbs the ancients also tried to increase the keeping properties of wine, just as we do now-a-days by the addition of alcohol. Aromatic grasses of the genus *Andropogon* were esteemed as spices to impart a flavour to the clay drinking cups known by the name of "Rhodian goblets". All this would scarcely appeal to our modern taste. Yet the Romans of the

*Anemone pavonina.*

later Empire must have been remarkable connoisseurs, for the variety of wines offered for sale then was almost unlimited. Virgil likens their number to the sands of the Lybian Desert, or to the waves of the sea. Whereas it was formerly the custom to dilute wine with water, the Romans, at the time of the Emperors nearly always drank it pure. They cooled several kinds with ice, as we do now, and began to value old vintages. Good wines had to be from eight to ten years old to be esteemed by them, and accounts are preserved of wines as much as 200 years old. Thus the Emperor Caligula (37 — 41 A. D.) relished a wine of the year 121 B. C. — the best Italian vintage on record in those days. Italy was the land which in Pliny's time produced the most highly valued wines; so that he might well assert that, by virtue of their merit, she ranked above all other countries, and was only excelled by them in the production of perfumes; nevertheless, he adds, there is no fragrance more delightful than that of the flowering

Vine. Even in Roman times Vines were pruned according to recognised rules, though the method of training the plant varied with the district. In Campania they allowed it to climb up the Poplar trees. Winding among the branches, in its luxuriant growth, it embraced the tree lovingly as it ascended to the summit. Not unfrequently did the vintager, when hired, stipulate with his employer, in addition to his pay, for a funeral pile and a monument in case he should meet with a fatal accident while gathering the grapes. A single Vine would often completely cover a whole country house with its clinging stems; and in Rome one could stroll in the Colonnade of Livia shaded by a mighty Vine which yielded twelve amphorae of wine. In many districts of Italy the Vines were trained on poles; in others they were permitted to trail along the ground. A similar diversity is seen in the modern Italian methods of cultivation. "Here", says Pliny, "the grape hangs with purple bloom among the green leaves, or glows rose-red, or droops in softest green. In one place the berries are round, in another oval, here large, there small, here hard and thick-skinned, there juicy and thin-skinned". Bunches of grapes were often hung on strings indoors that they might keep the longer, and others were steeped in sweet wine and thus soaked in their own juice.

After the fall of Rome the cultivation of the Vine declined in Italy. The grapes were gathered in a slovenly way, carelessly pressed, and the must was allowed to lie too long on the lees, so that the wine should assume that dark colour, which was then preferred.

Wines of this sort would not keep long and were therefore not sought after abroad. But quite lately this state of things is beginning to alter. Wine-growing is increasing in Italy and being dealt with very successfully.

The old custom of transporting wine in skins and then storing it in amphorae has vanished from Italy. Wooden casks, which were used by the Cis-alpine Gauls and the Alpine tribes, were introduced into South Italy as early as in Roman times.

CHAPTER III.

Bordighera ever remains pictured in the mind in a setting of Palms and indeed these trees thrive nowhere better on the whole Riviera. They lend to the place a touch of enchantment and spread an Eastern glamour around. On the East side of the Cap d'Ampeglio they form actual groves. Within the walls of these gardens rich in Palm trees, and on paths over which the slender stems wave their crowns, the wanderer feels himself transported to another world and forgets for a time that between the Riviera and the land of Oases lies the vast expanse of the Mediterranean Sea. Odysseus "when first he set eyes on the Palm at Delos by the altar of Phoebus Apollo, stood lost in enchantment, for surely nowhere on earth is there a tree more beautiful". With reverence do German travellers visit that picturesque group of Palms which adorn the sea shore east of Bordighera at the Madonna della Ruota. For these are the trees Scheffel sang of in his poem "Dem Tode nah" and under which he longed to be laid to rest. There

are about 20 of them (not twelve as the poet says) grouped round an old well, and their position in this wild, solitary spot washed by the sea waves may indeed inspire the wanderer with poetic sentiments. The description of this place sketched in the "Motifs artistiques de Bordighera" by Charles Garnier, Architect of the Grand Opera at Paris and of the Casino at Monte Carlo, shows that not only German genius has been inspired here. The style of the description is certainly rather flowery and reminds one of those florid decorations which adorn his magnificent buildings. "This is the place (he writes) which you should visit, ye Artists: this is the spot which you must see, ye Poets: this is the nook which must hold you spell-bound, all ye who seek for living and vivid impressions, and who feel that the pulse beats higher in the contemplation of Nature. Should recollections of the East be awakened within you when you wander in Old Bordighera and its surroundings, think not that you are standing there before a comparison, nor yet before a resemblance. No! all Judaea is embodied in this impression. There is the well of the woman of Samaria, or of Rebecca; those are the Jews, the Apostles; Jerusalem, Nazareth, Bethlehem lie before you on that modest promontory of Bordighera". The storm-lashed Date Palms round this old well with the never-to-be-forgotten background of sea, have supplied innumerable painters with subjects for impressive pictures.

There was much excitement in artistic circles when it became known that the place had been bought by

the German Landscape-gardener, Ludwig Winter, and was to be turned into a garden. But it was hardly to be expected that this piece of ground should remain long unused in such a thickly populated district. It must be considered especially fortunate that this lovely spot should have fallen unto appreciative hands. Herr Winter has left in its primitive condition that little pro-

jection of the coast, on which Scheffel's Palms grow; and he has laid out the garden in harmony with its surroundings. Anemones, Reseda, Carnations and luxuriantly blossoming Rose bushes now adorn the slope. Tall Palms rise from the soil which was formerly bare; and round a large tank a Pergola has been constructed, to whose pillars the Date Palm supplies the architectural motive.

In the Old Testament the Date Palms are likened to the proud daughters of kings. But the Date Palms in the gardens of Bordighera are not all as beautiful as this. The fault lies in the treatment to which most of these trees are subjected. Every year part of their fronds is removed. The Bresca family, of San Remo, received from Pope Sixtus V, in the sixteenth century, the privilege of supplying Rome with Palm-fronds for Palm Sunday. This was nominally as a reward to Captain Bresca, who, while the obelisk



Anemone tellata.

was being erected on the Piazza San Pietro in 1586, and the dry rope was sagging, helped the builder Fontana out of his dilemma by his timely shout of "Water on the rope". The Bresca family grew their Palms in Bordighera because they thrive better in the sandy clay there, than in the heavy clay of San Remo. Thus the Palm industry of Bordighera dates back to the Middle Ages, and even today it is this place that supplies most of the Palm-fronds in Rome for the celebration of Easter Sunday. The Christian Church has adopted the Palm-frond, as it has so many other symbols of Oriental imagery, from the Pagans and the Jews. And as Palm-fronds graced the Feast of Osiris in Egypt, the triumphal entries of kings and heroes into Jerusalem and the Olympic Games of Greece, so today they are used to decorate the altars of Roman Catholic churches.

Instead of spreading their crowns freely in the air, most of the Palms of Bordighera have their inner fronds bound up together like the tail of a horse. The object is to produce a special development of the young growing leaves. Not all Palms are equally adapted to such treatment, and a distinction is made between those which are suitable for the Roman Catholic Church and those which are adapted to the Jewish ritual. For the Jews also use Palm-fronds at their Feast of Tabernacles. The natives of Bordighera call the one Palm briefly "Cattolica" and the other "Ebreia". The leaves of the Roman Catholic Palm are slender, and those of the Jewish Palm short and compact. In the "Cattolica" the heart of the crown is bound tightly together so that the

new fronds develop in complete darkness and thus become as colourless as possible, for on Palm Sunday they are to be not only symbols of victory but also of heavenly purity. In the darkness these fronds grow long and slender; they run to a point and remain tender and supple, so that they can easily be plaited into any desired shape. In the Jewish Palms the older fronds are bound together, but less tightly, so that the light is not completely excluded from the younger ones and they can become green: but they remain shorter, stiffer and less pointed. At the Feast of Tabernacles the Jews combine Myrtle and Willow with the Palm-fronds and, while waving these bunches in their right hand, hold "Paradise Apples" in their left. This was originally the harvest festival of the Jews; but during their exile in foreign lands it lost this meaning, retaining only the other, also handed down from antiquity, namely commemoration of the Divine protection during the wanderings in the Desert. The most varied symbolical meanings have been attached to the ceremonial use of these four plants: they may perhaps have been representative of the vegetation of Palestine, but later on they fell under the influence of rigid ecclesiastical law, which prescribed that the Myrtle and Willow, as also the Palm, should be of a certain definite shape. Myrtles are specially grown for the orthodox Jew. The twig must be about three hand-breadths high and bear its leaves in whorls of three. Should the whorls be lax, and the leaves not attached at the same level, the twig is rejected. It would be better to use sprays on which the leaves were

in twos and strictly opposite. This kind is permissible in case of need, but is less highly prized than the real "Hadassah".

The Roman Catholic Church has shown itself much more indulgent with reference to the Palms required on Palm Sunday. In northern lands the Box and even the catkin-bearing Willow have replaced the Palm. On the Moselle the Box is actually called "Palm": this designation recurs for the same reason in the Caucasus. The ceremonial sprays of Willow are also called "Palm" in Slavonic countries. In Pliny's day, at the commencement of our era, the Date Palm was not uncommon in Italy. It must however have disappeared again during the barbaric centuries of the earlier Middle Ages, for the painters of the end of the twelfth century seem to have had no actual acquaintance with it. Otherwise Giotto would not have represented the Palm trees in his "Christ's entry into Jerusalem" as bearing their leaves singly all up the trunk.

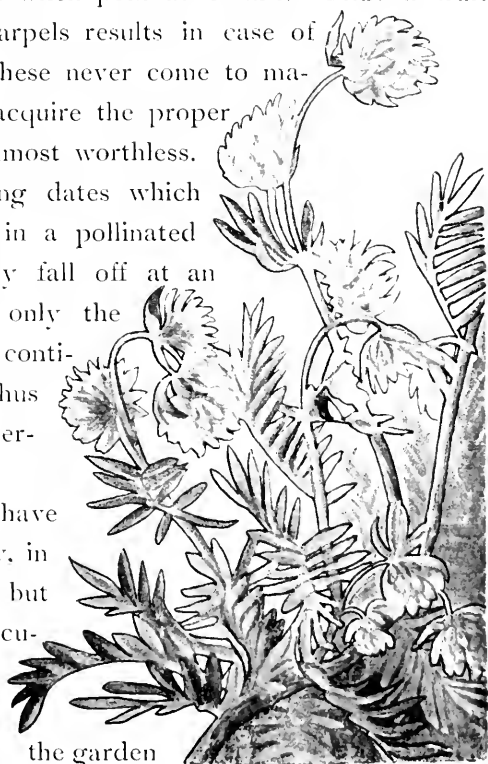
The fruits of the Date Palm are as a rule hard and uneatable on the Riviera. They require the scorching breath of the Desert to become soft and sweet. According to George Schweinfurt the sweetest and most tender dates ripen in a district that enjoys a mean temperature of at least 20—22 C, and in which there is a minimum rainfall. The Date Palm finds these conditions in the Oases of Algeria and Tunis, where it has from time immemorial been properly managed. It is there propagated only by offsets, for in this manner the purity of the stock is assured and the carpellary plants are obtained with cer-

tainty. Pieces of the staminate inflorescence are fastened in among the carpellary flowers to ensure pollination. One staminate usually suffices for 25 carpellary plants. Each of these latter produces on an average twelve bunches of fruit, and may yield as much as fifteen kilos of dates. The Arab prefers a harder and less sugary kind of date as food, for in the long run he tires of the sweet, soft date.

Each pistillate flower of the Date Palm contains three carpels, and later on all these begin to develop. This happens even when pollination fails. Thus a fruit with three blind carpels results in case of non-pollination. These never come to maturity, and never acquire the proper flavour, and are almost worthless.

Of the three young dates which begin to develop in a pollinated flower, two usually fall off at an early stage, and only the one favoured one continues to develop. Thus then arises the perfect date.

Ripe dates have been obtained lately, in May, even in Nice: but they are of a particular species. The tree which bears them grew up in the garden of Henri de Cessoles' villa. It



Anthyllis Barba Jovis.

has been taken for a hybrid of *Phoenix canariensis* with *Phoenix dactylifera*, an unproved hypothesis. The fruits are black, and as Dr. Fritz Mader tells me, taste like plum jam. About 50 kilos of fruit ripen yearly on this one tree, and as these become pure black the name of *Phoenix melanocarpa* has been proposed for it.

In the winter of 1890—1 the cultivated Palms of the Riviera had to stand a severe test as the thermometer sank for several hours to six degrees below zero. Besides the common and the Canary Palm (*Phoenix canariensis*), the Californian *Pritchardia filifera*, the Australian *Livistona australis*, and the Chinese *Chamaerops excelsa* showed most resistance to the cold. It is not surprising that the Dwarf Palm (*Chamaerops humilis*) should flourish at Bordighera, since it belongs to the Mediterranean flora: it is our only European Palm, being indigenous in Sicily and southern Italy. *Chamaerops* used formerly to be found wild in isolated spots between Nice and Mentone, but has now disappeared from them. In Algeria this Palm covers large tracts of land. An attempt was made to eradicate it there so as to cultivate the ground. Now however it is being carefully propagated. From a troublesome weed it has come to be regarded as an important economic plant. For after suitable treatment the leaves of the Dwarf Palm yield very elastic fibres which are used, like horse-hair, for upholstering furniture and for mattresses. In point of cheapness they have the advantage over horse-hair, and moreover are not attacked by moths. Whereas Palms of the genus *Phoenix* have pinnate fronds, those of the *Pritchardias*,

Coripheae and Chamaerops are palmate. As their aspect differs materially from that of the Date Palm their introduction is a distinct gain to the landscape of the Riviera. *Chamaerops excelsa* has already attained a considerable height in many gardens. It is one of the hardiest of the introduced species, so much so that it stands the winter in the Isle of Wight without protection. In fact it has proved itself to be hardier than our European Dwarf Palm. *Pritchardia filifera* is a great favourite in gardens because of the numerous white threads which hang out from the edges of the leaves. One of the commonest Palms on the Riviera is *Phoenix canariensis*, which is very like the Date Palm, but differs from it in its sturdier and more luxuriant growth. In sheltered places on the Riviera several species of the genus *Cocos* succeed, for instance *C. flexuosa* and *Romanzoffiana*, both exceedingly elegant, and also the pretty glaucous *Cocos australis* whose yellow or red fruits ripen here. These are almost as large as an egg and are much esteemed in Nice, Cannes and San Remo because their juicy covering smells of Pine Apple. The true Coconut Palm, *Cocos nucifera*, cannot survive either here or on the southern shores of the Mediterranean. Its cultivation is confined to the tropics. The leaves of the Coconut Palm resemble those of the Phoenix. *Arcca Palms* also have similar foliage. *A. sapida* and *Baueri* thrive on the Riviera: they are closely related to *Arcca Catechu*, which produces the Betel nut, — those nuts which, sprinkled with powdered lime and wrapped in Betel pepper leaves (*Piper Belle*), are chewed by young and old in

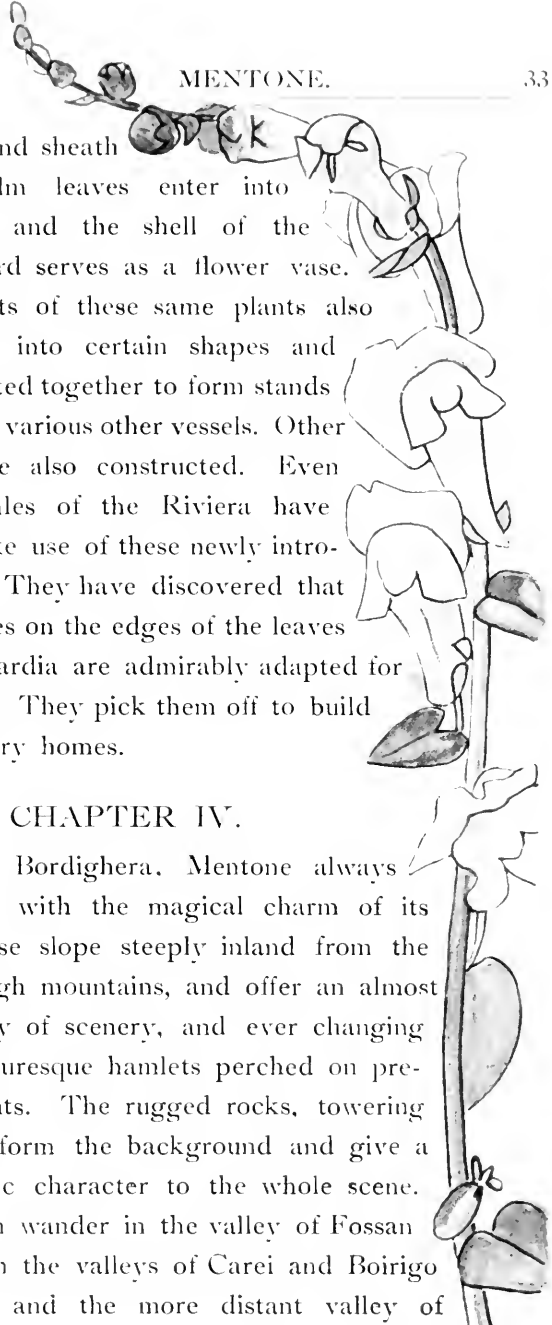
southern Asia. Broad leaved Livistonas are among the fan Palms which adorn the gardens of the Riviera. *L. chinensis* and *australis* are often seen in our hot-houses. Other palmate-leaved Palms grown on the Riviera are, the handsome, glaucous *Brahea Roezli*; the stately *Sabals*, whose tenaceous fibres are used for making ropes, hats, baskets and sacks; and the important Carnauba (*Copernicia cerifera*) of Brazil. In the Brazilian province of Ceara most of the huts are thatched with the leaves of this latter, and its fibres are used as straw. The hard stem of this Palm supplies wood for building and carpentry, its roots yield a medicine, its bitter fruits a nourishing food, and from its sap syrup and Arrak are prepared. In short this Palm is a good instance of the manifold uses to which a single species of this invaluable family can be put in the tropics. It owes its specific name of "cerifera", as also that of "Wax Palm", to its most important product — vegetable wax — which is secreted in the form of scales on its leaves. These scales are beaten off the young, dried leaves and then boiled in water, when the liquid wax collects on the surface. It is then mixed with tallow and made into candles which burn with a pleasant perfume.

Bordighera is not satisfied with exporting its Palm-fronds for ceremonial use. An attempt has been made to turn some of the handsome exotics to account in the manufacture of artistic objects. Thus an industry has arisen which centres in Herr Winter's nursery garden. The Date Palm, Chamaerops, *Livistona australis* and *Pritchardia filifera* furnish the materials for this work.

Blade, stalk and sheath of these Palm leaves enter into the designs, and the shell of the pilgrim's gourd serves as a flower vase. Different parts of these same plants also are moulded into certain shapes and dried, then fitted together to form stands for bowls and various other vessels. Other ornaments are also constructed. Even the nightingales of the Riviera have learnt to make use of these newly introduced trees. They have discovered that the long fibres on the edges of the leaves of the Pritchardia are admirably adapted for nest-building. They pick them off to build their temporary homes.

CHAPTER IV.

Next to Bordighera, Mentone always fascinates me with the magical charm of its valleys. These slope steeply inland from the sea to the high mountains, and offer an almost infinite variety of scenery, and ever changing views of picturesque hamlets perched on precipitous heights. The rugged rocks, towering to the sky, form the background and give a wild, romantic character to the whole scene. Thus one can wander in the valley of Fossan in the east, in the valleys of Carei and Boirigo in the west, and the more distant valley of



*Antirrhinum
latifolium.*

Gorbio, and visit all the wild, romantic villages — from Castellar, whose houses are huddled together at the top of a steep incline, to Roccabruna, which, with its half ruined castle, clings to the dark mountain side. Good carriage roads wind through the valleys, but the walker will prefer the paths which lead him to his destination in the shade of the Olives and Pines. A profusion of flowers surrounds him on all sides and though he may resist the temptation of gathering them into a bouquet, he will pluck some of the innumerable Violets from the bank. He who does not shrink from the exertion should extend this walk beyond the limits of the usual excursions. Not until you reach a considerable height does the full splendour of the landscape unfold itself, and the eye travel unimpeded over land and sea.

In the early morning hours of a warm, sunny, spring day we left the road which leads from Mentone to Monaco and turned into the fertile Gorbio valley, through which flows a stream of some volume. At first handsome villa-gardens line the slowly ascending road, then come modest farm holdings. Fragrant flowers trail over the walls; at first the showy flowers of the rich, and then the Wall-flowers, Stocks, Pelargoniums and Anemones which even the poor can afford. Cypresses festooned with Roses rise here and there high into the air. Lemon and Orange groves follow upon each other; then Fig trees. Higher up our northern fruit trees, Peach and Plum, occur here and there. They are in full bloom. It is still too warm here for Apples and Pears; they do not thrive until we reach St. Agnese, beyond the

rocks which close the valley to the north. It is worth while to collect the indigenous plants in the valley of Gorbio. Ardoino, author of the "Flore des Alpes Maritimes", mentions more than a thousand wild species as occurring in the valleys which open near Mentone. It would be necessary to search the whole of Ireland or Sweden to obtain as many plants as are to be found here in an area of 15 square miles. The valleys of Mentone are exceptionally rich in Orchids, and these nearly all flower in the spring. Many Ferns, rare elsewhere, are to be found here. Maiden Hair Fern (*Adiantum Capillus Veneris*, Fig. p. 13) is always a favourite with non-botanical people, adorning as it does with its graceful and delicate fronds the damp recesses of the rocks. The wedge-shaped pinnules of this fern seem to be borne on shiny, black wire, and wave and tremble with every breath of air. Not inappropriately did the Romans liken this pretty plant to the hair of Venus. Formerly it was used in medicine, and even now an infusion of its bitter-sweet and rather astringent leaves is occasionally employed in chest complaints. Prepared with sugar, the fronds of the Maiden Hair Fern make the "Syrupus Capillorum Veneris", which is said to be a specific for chest affections.

An old paved road through the Olive trees forms a short cut up the valley. At one of its bends Gorbio suddenly bursts upon the view close at hand. It crowns a steep hill completely clothed in Olive trees. An amphitheatre of mighty rocks encloses the view, giving it an exceptionally picturesque appearance. We soon

reach the spot, cross the Place, which is shaded by an old Elm, and turning to the left, strike into the path which passes by a spring and follows the slope of the hill. After half an hour's climb we reach the conspicuous cross which braves the weather high up on the projecting shoulder of the mountain. When the Mistral blows strongly it is hardly possible to linger in this spot. The shattered cross, which now stretches only one arm heavenwards, bears witness to the violence of the storms that rage up there. The view from the cross is overwhelmingly grand. It embraces all the valleys which converge near Mentone. On the heights we still see those wild villages, the strongholds of the Grimaldis and the Lascaris who once ruled over the valleys. A semicircle of mountains rises forbiddingly in the background and forms an impenetrable barrier to the eye, while to the south the blue sea stretches away into the distance. To enhance this impression might seem impossible; and yet, when we have reluctantly quitted this scene, the panorama increases in sublime grandeur as soon as we reach the ridge which runs southward towards Rocca-bruna. The walls of rock which close the valleys are seen in perspective like vast decorations, and the outlines of the picture become ever richer and more varied. In the middle of the landscape, on the northern slope of one of the mightiest of these giants, St. Agnese stands out, a village of some importance, hanging like a swallow's nest over the giddy precipice. Who could suspect the existence of this village? It is completely concealed from the sea by the rocks to which it clings. The high

cliff must have hidden it from the searching gaze of the Saracens who once sailed the Tyrrhenian Sea. And yet legend tells us that in the tenth century Harun, a Saracen chief, built the castle whose ruins today crown the summit of the mountain. He came here, however, not as an enemy, but vanquished by the love of a Christian woman whom he made his bride after his own conversion.



Arbutus Unedo.

Even those who are familiar with the loveliest parts of southern Italy will appreciate to the full extent this noble and typically Italian landscape. And how much more beautiful does it become when at sunset the tops of the mountains are tinged with red, casting long, dark shadows in the valleys, and touching St. Agnese on her grey rocks with its fiery glow. But now the sun has vanished behind the Tête de Chien; the shades of night

are falling in the valleys, time is short and a long stretch of stony path lies between us and the railway station of Cabbe-Roquebrune. Here an unexpected pleasure awaits us as a suitable ending to a day which has been such a feast of colour. The huge Judas trees (*Cercis Siliquastrum*) on the bank are in full blossom, and droop their leafless but flower-laden branches down over the brown wall. The pretty, crowded flowers grow out even from the old wood, so that the whole tree looks like a pink garland. This tree was in ancient times a favourite in the gardens of Jerusalem, and this may well have given rise to the saying that Judas had hanged himself on one of them.

CHAPTER V.

The view of Mentone from Pont St. Louis is enchantingly beautiful (Fig. p. 265). It is one of the most impressive on the whole Riviera and should be seen when Old Mentone is lighted from the east by the morning sun. The main road which crosses the bridge of St. Louis, and connects Mentone with Ventimiglia, begins to rise gradually just after Garavan, between villas and garden walls. When there is not too much dust the walk along this road is very enjoyable; for the gardens which border on it abound in luxuriant vegetation. With a profusion which defies restraint, foliage and flowers break free and overhang the walls. Bright red and flaming Pelargoniums, and a Rose bush studded with innumerable blossoms, trail over the stone work. Further on a wall is clothed from top to bottom with an Ivy-leaved cranesbill — the *Pelar-*

gonium pellatum — whose leaves are almost hidden beneath the pink flowers. Yonder bush, bending in a graceful arch over another wall, with its spikes of yellow flowers, is the Chinese Buddleia (*B. Lindleyana*). For some distance the road is perfumed with Heliotrope, growing over a railing close at hand: still further, bordering the road, is a Pergola covered with saffron-yellow Roses. Two huge Wigandias, with large leaves, grow out from a cleft in the wall at Villa Copley, and almost bar the way. Below them the ground is strewn with deep violet corollas, as though a shower of flowers had fallen there. Above the dark foliage of the Wigandias gleams that of a silver-grey bush, now just unfolding its bright yellow flower-heads. This plant belongs to the Pea-flower tribe, is indigenous here and loves the rocky sea shore: it must feel strangely out of place among these gay surroundings. The soft, flowing appearance of its silvery foliage has won for it the name of Jove's beard (*Anthyllis Barba Jovis* Fig. p. 29). Pressing close upon this is a plant from Equador, with panicles of large, orange-coloured flowers — the *Streptosolen Jamesoni* of the Solaneae — which, on account of the profusion of its blossoms and striking hue, finds increasing favour on the Riviera. The tubular corolla has a curious spiral twist at its base, hence the whole family has obtained the name of "Drehrohre" in Germany. *Teucrium fruticans* has long been grown here, often as a hedge. By the shape of its bright blue flowers it is easily known as a Labiate of the Germander tribe, although unlike our northern species of *Teucrium* it can attain a height of

two yards. The leaves of this North African shrub are almost snow-white beneath, contrasting with the vegetation and enhancing the colour effects along this rich-hued road. The "Fig Marigold" (*Mesembryanthemum acinaciforme*) adorns numerous walls with its heavy festoons of thick, fleshy leaves and purple flowers. The South African Composite, *Arctotis aspera*, a rough, hairy undershrub, bends over from many a garden. It is an unassuming plant and a great favourite here now: it bears dull-grey leaves, pinnatifid and crimped, and bright brownish-yellow flower-heads which in their dull sheen remind one of some of the Everlastings. The road takes a sudden turning and we pass a steep place completely overgrown with Bougainvillea, whose mauve flower bracts are so brightly coloured that in the sunshine the eye is almost dazzled by them. In delicate contrast with this is the beautiful white *Rosa Sinica*. Its blossoms are single with tufts of golden stamens. The splendid Bignonias, *Tecoma capensis*, whose large, carmine flowers show to such good effect in spite of the profusion of colours around, may rival the Bougainvilleas in brilliance. The name of "Trumpet flower" has been given to this genus on account of the slightly curved, tubular corolla widening at the mouth. Then we pass Orange and Lemon trees, still laden with fruit and already opening their fragrant blossoms. Amid this profusion of flowers we reach the little French Douane hut, and a few steps further bring us to our destination. The Pont St. Louis bridges with its bold arch the Ravine which divides Italy from France. The view over Mentone from here

is indeed of unsurpassed beauty (Fig. p. 265). The old town rests upon a small projection of land between two deep blue bays. The closely packed houses rise on it one above another. All are built in the Italian style, with Loggias, balconies and terraces, but varying in size and colour, and united without apparent system into a single confused mass. But all details are lost in the bright sunshine, when the whole town stands out almost white in the distance. The church, with its slender belfry, rises from the mass of houses. And in what grand surroundings is this picture set! On the western horizon the rugged chain of the Esterel is faintly outlined. On this side of them the coast falls back and the bold Tête de Chien above Monaco forms the next headland. This mighty

rock seems to mount guard over the long stretch of coast.

Cap Martin lies like a green velvet ribbon upon the blue sea, and behind Mentone rise jagged giants, blue-grey in the brilliant sunlight. White villages gleam among the foliage on the slopes, and in the valleys below the silver-grey of the Olives harmonises with the dark shades of the Lemons. Rich as the colouring of a kaleidoscope are the sides of the ravine at our feet. We look down upon a garden which



Arum
Arisarium
with leaf of
Arum italicum.

rises in terraces smothered with flowers. Pink and red Pelargoniums crowded together: rounded bushes of "Marguerites" (*Chrysanthemum frutescens*) studded with thousands of white starlike flowers: fiery Streptosolen: a Judas tree in blossom bending its pink branches over the white "Marguerites": a bright yellow rose entwined about the Judas tree: feathery tufts of slender Bamboo: Fan Palms: dark Cypress spires: succulent Agaves: a "Pepper tree" with light-green, finely pinnate leaves and "weeping" branches: dazzling red Bougainvilleas on the terrace walls — truly a party-coloured mosaic! Tall Date-palms rise from the ravine, framing the view of Mentone, while fantastic Opuntias near the bridge form the foreground: and this whole richly coloured picture is girt by the deep blue waters of the sea. A fresh breeze blows from the sea, and flowery Spring smiles on us from the gorge below. This sublime scene inspires us with feelings of harmony and joy, and we would willingly forget that yonder, above Mentone, where white stones and dark Cypresses rise within grey walls, is a place of mourning. Formerly a castle of the Grimaldis stood on this hill, then, between the ruins and the encircling wall, a cemetery was formed. This now overlooks the sunny coast as once the mighty stronghold dominated it, and is a landmark to the Mentone of today. In vain I seek to withdraw my thoughts from this place, but incessantly they return to it. Never before has a cemetery seemed sadder to me than yonder one with its graves covered with flowers, nor has the deep contradiction between the sunny joyousness of Nature and the suddenness of death ever

struck me so forcibly. The heart of every one who tarries there is oppressed by this contrast. From all quarters of the earth were gathered together those who now repose in this "God's acre". In the flower of their youth, far from their home, they were laid to rest under Jasmine and Rose. Does the soil lie lighter on them because flowers never fade upon their graves? Roses, white, yellow and red, grow there in special profusion, and spread an intoxicating perfume around. When I visited this cemetery on a former occasion the world was radiant with the glory of spring and the air teemed with joyous life. Yet it was sad among these flower-decked graves. By a newly erected monument sat a young sculptor carving the face of a tender maid on the stone: he was singing a merry song. I remained long standing before that grave: it was like a Shakespearian tragedy!

High above the Pont St. Louis jagged mountains, wild and romantic, rise abruptly. In the middle of the ravine a solitary pinnacle stands forth, and there are numerous caves in the wall of rock. Rosemary in full flower, the shrubby "Bush Spurge" (*Euphorbia dendroïdes*), Juniper, and large-flowered, silvery-grey Mallows (*Lavatera maritima*), cling to each projection of the rock and relieve the monotony of its surface. Below all is green with luxuriant vegetation. A clear stream gushes through the rocky cleft, forming pretty waterfalls. Part of the water is drawn off into a small aqueduct which winds about picturesquely and finally crosses the stream on an arched bridge. Everything is as effect-

ively united in this narrow space as in the scene of a theatre!

This ravine is one of the warmest spots on this particularly sheltered part of the Riviera. Surrounded and protected by high mountains, it lies open to none but the south wind. Violets bloom as early as December in the gully, and swallows never leave it. Lizards delay their winter sleep, and food is always plentiful, for insects buzz through the air, and the spider spreads her web to catch these even in winter.

CHAPTER VI.

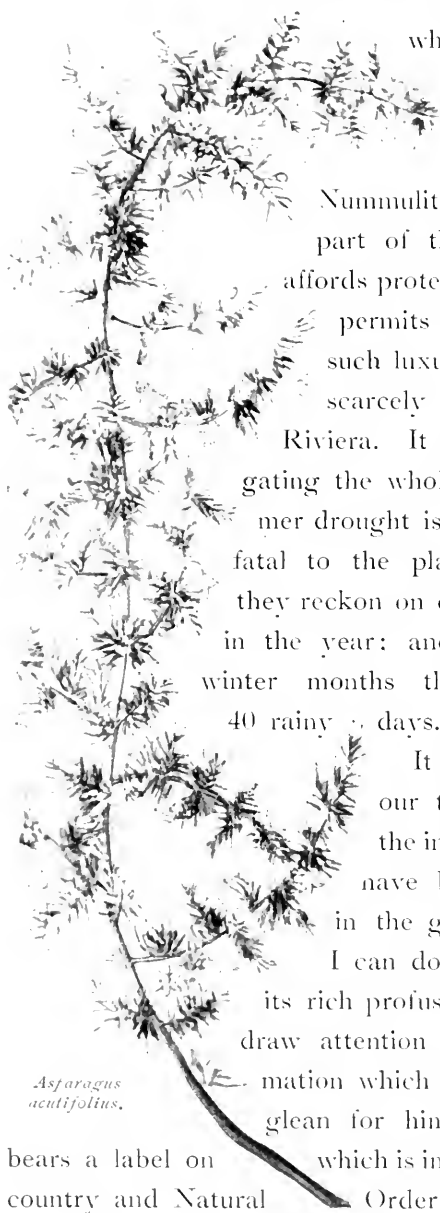
No visitor to Bordighera or Mentone should omit to make an excursion to La Mortola, the garden of Sir Thomas Hanbury. The public are admitted on Mondays and Fridays on payment of one franc. This money helps to support the Hospital of Ventimiglia. Those wishing to study in the garden will receive permission from the owner to visit it at any time. The beautiful Palazzo still standing in the grounds takes its name from the former owners, the Orengo family of Ventimiglia. When Sir Thomas Hanbury acquired this estate in 1866 there was a scanty Olive grove on it. With the aid of experienced and skilful gardeners he has converted it into the fairy-like spot which now charms the visitor. The late Mr. Daniel Hanbury, F. R. S., F. L. S., etc., brother of the owner, assisted with his scientific knowledge in laying the foundation of this vast collection of plants. The garden covers an area of about 40 hectares. It slopes up steeply from the sea to a height of 300 feet.

where the road passes through the village of La Mortola. The deep hollow in the Nummulitic lime-stone in which part of the garden is situated, affords protection against winds and permits of the development of such luxuriant vegetation as can scarcely be equalled on the Riviera. It is indeed only by irrigating the whole estate that the summer drought is prevented from being fatal to the plants. For at Mortola they reckon on over 200 cloudless days in the year: and even during the six winter months there are only about 40 rainy days.

It would be a rash endeavour to attempt to describe the innumerable plants which have been brought together in the gardens of La Mortola. I can do no more than mention its rich profusion and splendour, and draw attention to the valuable information which every visitor can there glean for himself. For each plant bears a label on which is inscribed its name, native country and Natural Order. A catalogue of the

Asparagus acutifolius.

bears a label on which is inscribed its name, native country and Natural



garden, published in 1889, enumerated about 3600 different plants. Since then their number has been much augmented by the addition of new species of scientific interest or technical importance. All Botanical Institutions duly receive the catalogue with permission to draw upon the treasures of the garden for scientific purposes. Sir Thomas Hanbury is careful to entrust the management of his garden to competent hands. Hitherto this duty has fallen to the lot of industrious and scientifically trained gardeners. Mortola is almost unique among private gardens and should arouse the emulation of other wealthy landowners.

The garden of La Mortola is at its best in spring. The Acacias particularly contribute to its splendour at that season. More than sixty species of them are grown there, including the Mimosa-like kinds whose finely pinnate leaflets are set in motion by every breath of wind, and those stiff, thorny species which fully justify their botanical names of "armed" (*armata*), "bristly" and "terrible" (*horrida*). Many of the Acacias are so smothered in yellow flowers that their green foliage is hardly visible, and most of them emit a pleasant aroma when in bloom. Names like "pleasant", "agreeable" (*suaveolens*) indicate certain species which are more perfumed than the rest. But the most fragrant of all these is undoubtedly the tropical American *Acacia Farnesiana* (Fig. p. 5), which bears its violet-scented flower-heads in winter. These little flower-heads, under the name of "Fleurs de Cassie", are largely used in Grasse and Cannes in the manufacture of scent. This plant, which has long been known in the south of Europe,

received the name "Farnesiana" because it was first cultivated in the Farnese gardens at Rome. *Acacia*, or *Albizzia Julibrissin*, is a stately Mimosa-like tree with twice pinnate leaves, but its bright violet flower-heads do not open till July. Its delicate, graceful, glaucous foliage renders it conspicuous at La Mortola as elsewhere on the Riviera. This tree is a native of the southern shore of the Caspian Sea. Its specific name is Persian and means "silk flower". The stiff, South African *Acacia horrida* yields an inferior gum known as "Cape gum". The finest Gum Arabic exudes, like the gum from our Cherry trees, from the bark of *Acacia Senegal*, a native of Senegambia and Kordofan.

A yellow flowered bush, *Pteronia incana*, from the Cape, is remarkable at La Mortola for its exceptionally agreeable perfume. It belongs to the same division of the Composites as do our Asters, and its flowers emit what I feel tempted to call etherialised odour of Apricots! Another bush from the Cape is *Diosma fragrans*, of the Rutaceae: the whole plant is sweetly scented. Not inappropriately has this genus been called *Diosma*, "Perfume of the Gods". Several species are much grown in greenhouses at home, and their foliage used for making up bouquets. A Chilian shrub of the Flacourtiaceae, *Azara microphylla*, with small yellow flowers is called "Aromo" in its native country on account of its Vanilla-like fragrance. A herbaceous *Salvia* (*S. albococculca*) has a faint, fruity odour. Various Pelargoniums, for instance *P. roscum*, and *odoratissimum*, diffuse a strong rose-like perfume when their leaves are

bruised. In many places in the garden the scent of the small, white blossoms of *Pittosporum Tobira* is almost overpowering. These flowers are borne in large numbers on an evergreen tree-like shrub which is not unlike the Laurustinus (*Viburnum Tinus*). There is also a species with almost black flowers, which have a very curious effect. Sweetly scented like our Chickling Vetch (*Lathyrus sativa*) is a dainty tree with "weeping" boughs, which owing to the profusion of its flowers looks quite white at a little distance. It is a west Mediterranean species of Broom, *Genista monosperma*, one of the most graceful plants of the Riviera, and ought to be called a "shower of blossoms". Passing suddenly from this plant it seems difficult to believe that *Genista Acanthoclada*, a bush from the Grecian hills, can belong to the same genus. This plant is so thorny that it was transferred to Tartarus as an emblem of terror. Aspalathus, called after the island of Aspalathe on the coast of Lycia, is said by legend to have furnished the rods with which the ungodly were chastised in Hades.

Visitors to the gardens cannot fail to notice the large Casuarina trees which shade the entrance steps. The name of this family was suggested by the thread-like, grey-green, pendant twigs which hang down like the feathers of a cassowary's tail. As the twigs are leafless the work of feeding the tree devolves upon them: this is why they are green, that is to say contain the green colouring matter — chlorophyll — whose presence is essential for the elaboration of the sap throughout the tree. In Australia Casuarinas form vast, characteristic forests.



*Asphodelus
ramosus.*

foliage is
sunlight,
breeze, a
the Euca-
to effect in
are among
Australia

Like so many other Australian trees they cast but little shadow on the ground. The flowers are so small and inconspicuous that only the expert eye could find them. The wood of the Casuarina is remarkable for its great hardness and weight, and was for this reason used by the aborigines for making their war-clubs. — Another Australian genus which has been spread with great rapidity all over the Riviera in the last decades, is that of the Eucalyptus. The Mortola garden has many different species. The most commonly met with on the Mediterranean is *E. globulus*. Eucalypti also afford little shade: their leaves are indeed fairly large, but they hang perpendicularly on long stalks so that even when the dense it cannot completely shut out the And as the trees are stirred by the lightest peculiar, tremulous twilight reigns under lyptus: this however can only be seen forests of these trees. The Eucalypti the giants of the Vegetable World. In trees of *E. amygdalina* have been found

measuring 514 feet in height. This corresponds to that of the towers of Cologne Cathedral; the Pyramid of Cheops, however, and the dome of St. Peters in Rome fall short of it by five, and twenty yards respectively. Eucalyptus trees grow exceedingly fast even on the Riviera, and soon tower above their surroundings although they were introduced not more than forty years ago. At La Mortola a *Eucalyptus globulus* attained a height of 60 feet and nearly five feet girth in seven years. No other trees in Europe have been known to grow so rapidly. In spite of this rapid growth the wood is very hard. Eucalypti have been planted in many places because wholesome effects have been attributed to their exhalations. But in reality the infinitely small quantity of volatile oil which the tree emits could scarcely have any appreciable effect. On the other hand as they grow so rapidly, and, being evergreen, continue to evaporate water from their leaves summer and winter, they may contribute towards the draining of swampy ground. The hope that an essence extracted from the leaves and bark of the Eucalyptus would take the place of Quinine was never realised. But this extract does really possess certain febrifuge properties, and justifies its use from time immemorial by the Australian aborigines. In April the older trees on the Riviera are decked with large, white flowers, which are remarkable for their numerous, long, thread-like stamens. The Botanist will know at once that he is dealing with a plant belonging to the Myrtle family. A peculiarity of the Eucalyptus is that their flower-buds open by a round lid, which falls off like a white frosted

cap. These lids may be seen in spring lying in great quantities under the Eucalyptus trees: when trodden upon they emit a very penetrating odour. Latterly these flower-buds have been turned to account in the making of crosses and rosaries. Young Eucalyptus trees, such as we see in our northern 'greenhouses, present at first quite a different appearance to that of older trees. They scarcely seem like the same plant. The leaves are short and broad, encircling the stem with their base, and are attached horizontally: only on the older branches are these replaced by the narrow, pointed, long-stalked leaves which hang down.

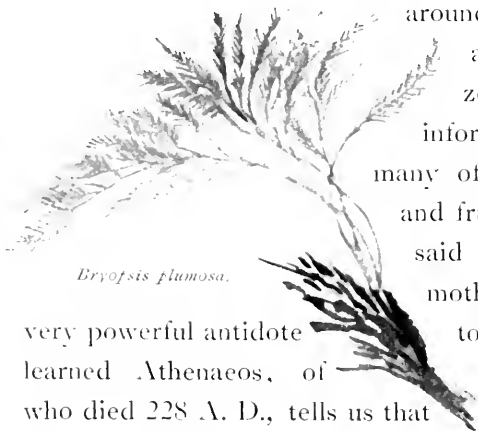
Eucalyptus globulus, which is such a favourite on the Riviera, is not the hardiest representative of the genus, for even here it suffers in exposed situations in a severe winter. Many species stand the cold better, and *E. Gummi* thrives even as far north as Whittingham near Edinburgh.

To the high chain of the Maritime Alps, which ward off the cold north wind, the Riviera di Ponente owes its mild climate. Without this protecting barrier the cultivation of the Agrumi in this latitude would be impossible. In many places on the coast between Nice and Savona the Agrumi thrive quite as well as they do at Naples: whereas one might traverse the inland districts of Northern and Middle Italy without seeing any of them. Under the name of "Agrumi" are included the representatives of the genus Citrus. The Catalogue of La Mortola Gardens contains the names of more than twenty species and varieties of this genus. Almost all the kinds of

Agrumi cultivated in Italy may be seen in this garden brought together within a small compass. These trees are so inseparably connected in our minds with southern skies that the land of Italy is ever pictured in our dreams as permeated with the fragrance of orange blossom and gleaming with their golden fruit. Goethe's beautiful "Mignonlied", lines which have expressed for all time the yearning of the northerner for sunnier climes, has no doubt contributed much to this idea. But though the Agrumi may appear to form part of the Italian landscape they nevertheless were not introduced there till comparatively late and have remained confined to certain districts. Their home is in distant Asia, in India and Southern China, and they made their way to Europe through the Levant. The name "Citrum" was first applied by the ancients to the wood of *Callitris quadrivalvis* as may be seen in the "Traité du Citrus" by Galesio (1811), the "Histoire naturelle des oranges" by Risso (1801), Victor Hehn's "Kulturpflanzen und Haustiere", the "Origin of Cultivated Plants" by Alphonse de Candolle, and lastly Flückiger's "Pharmakognosie", not to mention older sources of information. A well grown specimen of this north African conifer may also be seen in Sir Thomas Hanbury's gardens. It yields "Gum Sandarac", a resin which exudes from the bark in hard, white drops and trickles from the trunk when injured. Grained slabs of this perfumed wood and transverse sections of the trunk were highly prized by the Romans. They were coveted objects among the splendour-loving Roman nobles, and realized high prices. Some of these slabs measured more

than a yard in diameter; they were supported on ivory pillars and called "monopodia". This wood was also used for making costly chests in which woollen garments were preserved from moth. When later the "Median Apple" became known to the Romans and acquired the same reputation as the "Citrum" wood for keeping off moth, the name of "Citrum" was applied to it also. The first accounts of the trees which bore these "Mala citria" reached Greece at the time of Alexander the Great. His conquests opened up the East and the tropics to Greek culture and introduced to the classical lands a wider range of new natural objects than was brought in at any time until the discovery of Tropical America. In Media the Greeks first saw the evergreen tree with dark foliage that bore the golden apples. The scholars who accompanied Alexander the Great gave an accurate description of the tree — a description which Theophrastus has handed down to us in his "History of Plants". This however did not prevent legends from soon springing up

around this wonderful fruit; and Pliny, with his zeal for collecting such information, has preserved many of these. The leaves and fruit of the Citron were said not only to keep off moth, but also to be a very powerful antidote to poison. Indeed the learned Athenaeos, of Naucratis in Egypt, who died 228 A. D., tells us that it was a common



Bryopsis plumosa.

superstition that those who had partaken of the fruits of the Citron tree became proof against the bite of poisonous snakes. So at least we are given to understand in that curious work of Athenaeos', so rich in quotations, which he has called "Deipnosophists" or "Banquet of the learned". Here, under the guise of an imaginary feast, he gives us a vast amount of information respecting old manners and customs and the art and science of his time. A rich and gluttonous Roman "bel esprit" has invited to his banquet many artists, poets and learned men. The delicacies which are provided stimulate the company to conversation on many topics. Apropos of the Citrons a certain Democritus relates the following, told by his friend the governor of Egypt. Two criminals had been condemned to death by poisonous snake bites, but did not succumb because they had previously eaten Citrons. The experiment was repeated with the same men when one had been provided with the antidote and the other not. The former recovered from the bites of the venomous reptiles, while the other died at once. This same Democritus recommends a Citron cooked with honey as the best antidote to poison. If you take this antidote in the morning you will be proof against poisoning for the whole day. There is always a spark of truth underlying the superstitions which give rise to such fables. As a matter of fact the Citron possesses strong antiseptic properties, for which it is even now valued. The ancients had already found out that the juice of the Citron purified the breath. This was not our Lemon but the true thick-skinned *Citrus medica*

which is characterised by its warty surface, and which is only slightly acid. There is a large-fruited variety of this Citron, the Cedrat, familiar to us in confectionary. The rind is exceedingly thick and when preserved in sugar is known as "candied peel". A spherical Lemon, remarkable for its rough and aromatic rind, is distinguished as "Adam's" or "Paradise Apple". This was supposed to be the fruit of the Tree of Knowledge and is still used to represent it by the Jews in their Feast of Tabernacles. The fruits most in request for this feast are grown in Corsica, Corfu, Morocco and Palestine, and fetch very high prices when they are of the prescribed form.

At the beginning of our era the Citron tree was brought to Rome from the far East in earthenware vessels. Thus grown it became very fashionable and was used to adorn the gardens and colonnades of the villas. Being very sensitive to cold it is planted out only in the most sheltered spots. It differs from all other Agrumi in that it bears flowers and fruit all the year round.

The Lemon was brought to south Europe in the tenth century by the Arabs, reaching first Spain and then Sicily. At this time it was still unknown on the Coast of Liguria where it was introduced towards the end of the eleventh century by the Crusaders, who brought it from Syria and Palestine. The "Pamplemousse" and the bitter-fruited Orange were introduced on the Riviera with the Lemon tree. Liguria was for a long time the only land in which the Agrumi were specially cultivated, and this industry, no doubt, received a considerable impulse in the fourteenth century when the

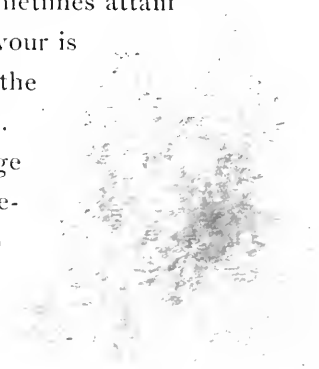
demand for luxuries began to increase. It spread in Italy simultaneously with the use of lemonade, the preparation of which had been learnt from the Orientals. The first "Limandiers", which were soon to play a similar part to the "Cafetiers" of today, appeared in Paris at the time of Cardinal Mazarin. The Lemon, which possesses the same purifying properties as the Citron, makes a drink which is not only refreshing but also antiseptic. In the herbals of Tabernaemontanus, "Der Arzney Doctoris und Chur-Fürstlicher Pfaltz Medici", which dates from the latter half of the sixteenth century, we are told that Lime-juice "is not only a specific for internal complaints and poison", but also "for all sadness, heavy-heartedness and melancholy". The peel is said to counteract poison, "for in times of plague it should be kept in the mouth, and also be used for fumigating". Lime-juice is today the most efficacious anti-scorbutic, counteracting that disease of the mouth and gums to which sailors are especially subject. For this reason Lime-juice is carried in sealed bottles on the war ships of the English navy, and other countries have followed their example.

I have endeavoured to ascertain the origin of the custom, which is still so widely spread, among bearers, of carrying a Lemon in their hand at funerals. This was at one time an almost universal practice. I have come to the conclusion that it was originally on account of the purifying properties and strong scent of the Lemon, and that later a symbolic meaning has come to be attached to it. The Lemon has subserved many sym-

bolic uses. J. B. Friedrichs in his "Die Symbolik der Mythologie der Natur" says: — "The aromatic, refreshing and reviving properties of the Lemon led to its adoption as the symbol of Life and as an emblem of protection against the agencies destructive of it. Hence, according to ancient belief, the Lemon guarded against sorcery. The Indian widow, who is about to be burned after the death of her husband, carries a Lemon in her hand on her way to the funeral-pyre, as an emblem of future reunion with her husband; and the mourners at a funeral carry in their hand a Lemon symbolising the new life of the departed. Children going to their first Communion also carry this fruit as a sign that they are entering upon a new life through their renewed bond with God".

Citrus decumana, the "Pamplemousse", will at once attract attention in the gardens of La Mortola by the size of its fruits. They hang from the tree like great, bright yellow balls and sometimes attain six kilos in weight. The flavour is insipid, but is improved by the addition of sugar and wine.

The bitter-fruited Orange has particularly aromatic leaves and flowers. Its deep golden fruits are not eaten fresh, but the rind when preserved in sugar is very tasty. A volatile oil is expressed from the leaves, flowers



Callithamnion roseum.

and unripe fruits, and these latter are much used in the making of Liqueur. As the bitter-fruited Orange is particularly hardy it is commonly used as a stock on which to graft other species of Citrus.

The sweet-fruited Orange reached Europe considerably later than its relations. It is commonly supposed that the Portugese brought it with them from South China towards the middle of the sixteenth century, and the year 1548 is even mentioned as the date. Indeed a tree said to be the first ever planted in Europe was shown in the garden of Count St. Lorenzo at Lisbon. It is however certain that the sweet Orange adorned the gardens of Spain and Italy long before this; it must have reached Europe as early as the fourteenth century. Galesio attempts to prove in his "Traité du Citrus", published in 1811, that the cultivation of the sweet Orange dates back to the fifteenth century even on the Riviera; but his argument is not conclusive. He adduces as a proof the fact that, according to the archives of Savona of the year 1471, a present of preserved Citrons and Lemons, as well as fresh "Citruli", was sent to their envoy at Milan. And because the fruits called "Citruli" were sent fresh Galesio infers that they were sweet Oranges, since the envoy would not have been able to eat bitter ones. Moreover in the records of a Notary in Savona mention has been found of a transaction, in 1472, in connection with the lading of a ship with fifteen thousand "Citranguli" or "Cetroni", and Galesio asks what they could be doing with fifteen thousand bitter Oranges. We may, however, leave his

question unanswered without conceding that they were really sweet Oranges. Galesio's assumption seems all the more unwarranted since Matthæus Silvaticus of Salerno, in his "Opus pandectarum medicinae" completed in 1317, calls the bitter Orange "Citrangulum". This same name was also used before his time by the translators of Arabic works to render the word "Narindj". Again, the name "Portogallo", by which the Orange is still commonly known in Italy, points to the important part played by the Portugese in the distribution of the better kinds of sweet Orange. The Chinese origin of the sweet Orange is shown by the German name "Apfelsine", originally "Sinaapfel" or Chinese Apple. This German name was adopted by the Russians, although immediate neighbours of the Chinese — a proof, as Victor Hehn says, of the complete revolution in the world's traffic, which since the time of Vasco de Gama no longer passed through Asia from East to West, but along the less direct highway of the Ocean.

The name "Orange" comes from the Sanscrit "Nagarunga" or "Nagrunga". The Arabs have altered this to "Narunj", the Italians to "Naranzi" or "Aranci", the Spaniards to "Naranja", the Portugese "Laranja", and lastly the French to "Orange". The name "poma aurantia", golden apple, used in the Middle Ages, resembles that of "Orange" only in sound. But "poma aurantia" gave rise to the German "Pomeranze" and the Polish "Pomarańcza".

The Golden Apples of the Hesperides, which, according to legend, Hercules brought from the West,

cannot have been Oranges, as is proved by the history of this fruit. They were more probably idealised Quinces. These fruits, sacred to Aphrodite, were given as prizes in contests and as bridal gifts in ancient times in Hellas.

The beauty of a fully developed Orange tree adorned with hundreds of golden fruits can hardly be realised on the Riviera or even at Sorrento. I first saw them in their full luxuriance, and about the size of our Apple trees, at the foot of Mount Etna. Theobald Fischer, in his "Beiträgen zur physischen Geographie der Mittelmeerländer", asserts that in Sicily a full-grown and well cultivated Orange tree yielded from six to seven hundred and a Lemon tree a thousand to a thousand one hundred fruits. Formerly a hectare of land at Palermo planted with Agrumi brought in on an average three thousand Lire gross profit; whereas the most fertile gardens near Paris only bring in two thousand five hundred to two thousand seven hundred Francs for a similar area. But according to Theobald Fischer Orange growing has become less profitable in Sicily since then. The increasing cultivation of the Orange wherever the climate is suitable to it, especially in the United States, has lowered the prices considerably.

There is an infinite variety of Oranges of which however only a few reach us. Among others is the increasingly popular "Blood Orange", or "Jericho Orange".

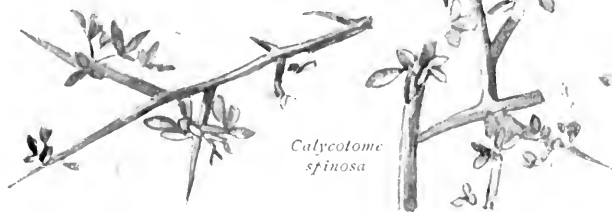
Mandarins (*Citrus nobilis*), are now exported from Italy in great numbers. The shrub, which thrives on the

Riviera even better than the Orange tree, is considered as a separate species. It is smaller in all its parts, and easily recognised by its rounded, bushy growth. The Mandarin has been cultivated in China and Cochin China from time immemorial; but it appeared first in Europe in 1828.

Citrus Bergamia, the rind of which yields the exquisite perfume known as "Oil of Bergamot", may also be seen in La Mortola Gardens, as well as the *Citrus Myrtifolia*. The very small fruits of this latter, when preserved in sugar, form the much liked "Chinois". The sweet Lemon or "Limette", which is only a variety of the ordinary Lemon, and is eaten like the sweet Orange, is also grown there.

A curious shrub is *Citrus trifoliata* from Japan. It bears trifoliate leaves and is armed with large, sharp thorns. Except in the structure of its flowers and fruits this plant bears no resemblance to the other species of Citrus. The perfume of the large, white flowers is not very strong.

Little was known about the native country of the Orange family until it was found wild by explorers.



Calycotome spinosa

According to a critical comparison of Engler's discoveries wild Agrumi were found at the foot of the Himalayas and in other neighbouring Indian districts. There, too, the bitter Orange grows wild. The sweet Orange and Mandarin, on the other hand, are indigenous to Cochin China and South China. The origin of the Pamplemousse is still uncertain.

There is a striking sport, or freak, in the Gardens, indicated in the Catalogue as "*Citrus Aurantium* var. *Buddhafingered*". The peculiarity consists in the individual divisions of the Orange growing free instead of being united into a single, round fruit. So that the Orange develops a number of protuberances reminding one slightly of a hand with out-stretched fingers. This led to its being likened in India to Buddha's hand, and gave rise to superstitious fables. Similar freaks occur in the Citrons and Lemons, and are perpetuated by grafting.

Far and away the most remarkable of the "Agrumi" is the Bizzarria, which bears Oranges, Lemons and Citrons all together. It produces also intermediate forms, as well as fruits which have some of their divisions like those of Oranges and others like those of Lemons or Citrons. Bizzarrias have been described the fruits of which united the characteristics of five different species of Agrumi. The origin of the Bizzarria is not as yet understood. They are considered by some authorities to be hybrids, while others maintain that they arose by the fortuitous blending of the characteristics of the stock and the scion. This would be remarkable, for

long experience in grafting fruit trees, roses and other plants teaches us that the stock has no perceptible influence on the scion, and that both retain their character unaltered. Bizzarrias have been known since the middle of the seventeenth century. They must always have attracted attention on account of their peculiarities. The first Bizzarrìa to be described was one grown in the Panciatichi Gardens at Florence in 1644. In 1711 the "Académie des Sciences" investigated this plant and came to the conclusion that it was as much a distinct species as the Orange or Lemon.

There is a small tree grown in our northern gardens which is as peculiar as the Bizzarrìa and whose origin is equally obscure. It is a Laburnum, called *Cytisus Adami* after the French gardener who introduced it. This graceful and interesting tree is easy to grow, so that no garden-lover need be without one. The majority of its flower-clusters are like those of the common Laburnum (*Cytisus Laburnum*) but of a dull red colour. Some twigs bear bunches of pure yellow flowers, while others have solitary purple flowers. The twigs on which these latter grow are differently shaped, with smaller leaves resembling another species of *Cytisus*, *C. purpureus*. Lastly this plant produces clusters of flowers some of which are yellow, some red and others half red and half yellow. Only those blossoms which resemble *Cytisus Laburnum* and *C. purpureus* produce seed; the others, like those of so many hybrids, are barren. Most authorities are inclined to the opinion now that *Cytisus Adami* is a peculiar hybrid between *C. Laburnum* and

C. purpureus although the gardener Adam, at Vitry near Paris, stated that he had produced this new plant by grafting *C. purpureus* on *C. Laburnum*. Proofs of this assertion are not forthcoming and all statements about the blending of characteristics by other means than by crossing, remain unsubstantiated.

Those plants which bear dissimilar flowers and fruits on the same tree because a branch of another species has been grafted on it, come under quite a different category to the Bizzarria and *Cytisus Adami*. Thus trees bearing both Lemons and Oranges may occasionally be seen in the gardens of the Riviera. But in this case neither species has any influence upon the other. The uniting of different species on one stem by grafting is practicable only within narrow limits, for the scion and stock must be closely allied. Statements are, however, continually being made to the contrary, and in ancient times stories of Nuts being grafted on Arbutus, Apples on Planes, and Pears on Ash-trees were commonly believed. Virgil did much to spread these fables by his "Georgics". Pliny repeats them, and insists moreover that he has himself seen in the "Tiburtes Tullias" a tree which bore nuts on one branch, berries on another and grapes, figs, pomegranates, pears and apples on others. A tree of this sort would indeed provide a large variety of dessert! What a pity that the "Tiburtes Tullias" should alone have possessed such a tree, and that it has never been seen since! Again, according to Pliny, hybrids such as nut-plums, apple-plums, almond-plums and laurel-cherries could be produced by



*Coffaris
spinosa.*

grafting! As early as the middle of the thirteenth century Albertus Magnus, convinced by his own observations, contradicts this statement in his "De Vegetabilibus". He asserts especially that both stock and scion retain their own characteristics, developing each after its own kind. Considerable progress in horticulture was made in the middle of the sixteenth century by Kurfürst August of Saxony, who was so enthusiastic about the

cultivation of fruit trees that he himself wrote a "Künstlich Obstgarten-Büchlein" in 1564. Those of his statements which are based on his own experiments are reliable, but even he is occasionally led away by his enthusiasm to relate in good faith that Almond has been grafted upon Willow and Chestnut on Beech, and how Apples thrive and bear red fruits when grafted on Maple! Le Gendre, one of the chief inventors of the method of training fruit trees as espaliers, took his stand on the ground of actual experience, and in his book "La Manière de cultiver les Arbres fruitiers", of 1652, no mention is made of such wonderful things.

Unfortunately the Bizzarria is becoming rarer, and hitherto the Mortola Gardens have not succeeded in obtaining one. However this garden possesses a curious

tree bearing fruits like Oranges and Lemons in shape but both orange in colour.

Visitors to La Mortola will be glad to learn the names and native country of two plants which must have struck them in other gardens — *Wigandia Caracasana* and *Echium frutescens*. We first admired this Venezuelan *Wigandia* on the walls of Villa Copley; its large violet flowers, with their yellow stamens, grow in spikes, which are coiled up at their apex, like a crosier, as are the inflorescences of other representatives of the Hydrophyllaceae. These uncoil as the flowers open. This arrangement has the advantage of ensuring a very long flowering period, so that the plant can tide over bad weather, or other unfavourable conditions, without failing to set seeds. *Echium frutescens*, a Borage from Mexico, is closely allied to our common Viper's Bugloss (*E. vulgare*). *E. frutescens* is a giant representative of this latter, and those who know the Viper's Bugloss will at once recognise it as such. It bears the same blue flowers in one-sided spikes, only considerably larger.

We now turn to the "noble Laurel", a tree whose twigs have from time immemorial crowned the victor's brow and whose leaves also serve the modest purpose of flavouring our food. The Laurel which seems as closely associated with the Italian landscape as the Agrumi, was certainly at one time indigenous to South Europe, for palaeontological discoveries have established its existence in prehistoric times not only in Italy but also in the South of France. Its veneration as a sacred plant seems to have come from Asia Minor across the Medi-

terranean. It was sacred to Apollo, and as the sanctuaries of this god became more numerous in Greece, the groves of the aromatic and evergreen Laurel were multiplied in the land. The Laurel and the Myrtle, which was dedicated to Aphrodite, were brought over to Italy as sacred trees at the time of the introduction of the greek gods. In La Mortola Gardens the Laurel has been planted to some extent, and has now established itself on the west slope between the road and the garden.

Shady avenues of Laurel and Plane, especially on the Campus Martius, delighted the citizens of ancient Rome. The belief that the Laurel afforded protection against demons, sorcery and infection, was once universal. Thus we are told that when a plague was imminent the timid Commodus sought safety in a Laurel Grove. Wreaths of Laurel were placed on the brows and round the necks of the insane to cure them. Laurel berries or leaves were partaken of by the priests of Apollo before prophesying; and prophets carried Laurel when entering a town. The Laurel cleansed from blood-guiltiness, and with it the Roman legions purified their standards and weapons directly after a victory. Hence it came to be regarded as an emblem of victory and a symbol of successfully accomplished campaigns. It was considered as an omen of good fortune that on the day when Augustus was born the Laurel tree in front of the Palatine sprouted. The cleansing properties of the Laurel led to its use as an aspergillum. The devotee dipped Laurel leaves into the holy water and sprinkled himself

as he entered or left the temple, and liked to take away a leaf of it in his mouth. The Roman Catholic Church discarded Laurel twigs as aspergilla and adopted the Hyssop (*Origanum Smyrnaeum*) for that purpose from the Jews.

According to Pliny the Laurel does not burn freely. This is proved by its crackling. The power of warding off fire was ascribed to this tree because in the conflagration during the consulship of Spurius Postumius and Piso the Sacrarium, protected as was supposed by a Laurel which stood in front of it, remained intact while the Regia was in flames. On the other hand Laurel wood was used by the ancients in the kindling of fire; it did not, however, ignite itself, but, as Theophrastus and Pliny report, formed the rubbing stick, while the base or socket, which took fire by friction, usually consisted of Buckthorn (*Rhamnus*) or Ivy wood. A pure sacrificial fire might only be kindled by the friction of two pieces of lucky wood, or by the sun's rays concentrated by means of a burning glass, or concave metal mirrors. Laurel was also said to ward off lightning; and therefore the superstitious Tiberius, as Suetonius relates, crowned himself with a wreath of this plant when a storm was threatening. Certain observations may have given rise to the belief that the Laurel possesses peculiar storm repelling powers, for some trees are less frequently struck by lightning than others. In our own country Walnut trees are very seldom struck and Oaks the most frequently. The reason for this is that the conducting power of wood varies much in different species. It

appears from experiments which have been made, that those trees which contain much oil in their woody tissue at the time of year when storms are frequent, are the least exposed to the ravages of lightning. Dead branches on a tree increase the chances of its being struck. It must have been early noticed that the Oak was most frequently struck, hence it was sacred to the God of Thunder. The contrary supposition is not so well founded in the case of the Laurel, at any rate it has been questioned.

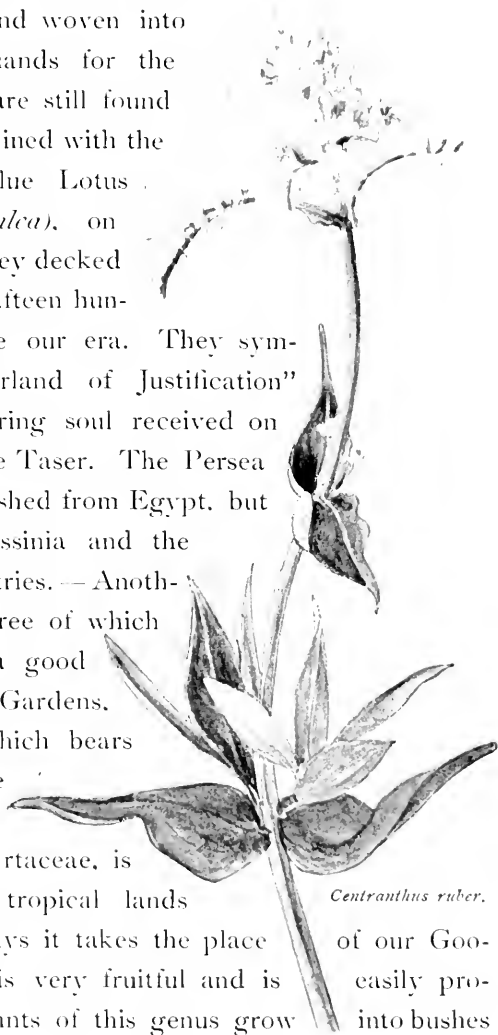
The Camphor tree (*Cinnamomum Camphora*) belongs to the Laurel family and is a native of Western China and Japan. It grows to a fine tree on the Italian Lakes but does not flourish here as the calcareous soil does not suit it. The evergreen leaves of the Camphor tree are much thinner than those of the Laurel, and as they grow on long stalks the foliage has a less dense appearance. In addition to this the leaves are of a much lighter green, shiny above, glaucous below. When bruised the leaves emit a strong smell of Camphor; the Camphor, however, is not procured in any great quantity from these, but from the wood of the tree by sublimation.

Closely related to the Camphor tree is the Cinnamon (*Cinnamomum zeylanicum*) whose shiny green leaves when crushed smell of carnations. The Cinnamon of commerce consists of the bark of young shoots of the Cinnamon tree, which are cut off and peeled after heavy rain. The bark is allowed to dry first in the shade and then in the sun, so that the flakes curl up together and form little rolls. Hence the German name of "Kaneel" from "canella", a little reed or tube.

In unpleasant contrast to these aromatic Laurineae is another representative of the same family, *Orcodaphne californica*, an evergreen tree which grows well here and whose specific name indicates its native country. In gardens it is frequently labelled *Laurus regalis*, and indeed it is very like the Laurel. The leaves, however, when rubbed emit a volatile oil the smallest quantity of which is sufficient to irritate the mucous membrane of the nose intensely. The inhabitants of California avoid these trees or keep to the windward side of them, as the volatile oil which they diffuse provokes continued sneezing.

Another of the Laurineae, the *Persca gratissima*, may be seen at La Mortola. It is much grown in tropical gardens and bears the "Alligator Pear" or "Midshipman's Butter". The crown of this beautiful tree is dome-shaped and its leaves resemble those of the Laurel. The fruits, which are generally pear-shaped, though frequently very irregular, have a stone in the middle. The pulp melts like butter in the mouth and smells like musk-melon. The Mexicans are very fond of these Alligator Pears made into salad, and vie with one another in the tasty preparation of it. In other countries they are eaten with lemon-juice and sugar and even with meat. All animals are fond of these fruits and regard them as delicacies. *Persca gratissima* is indigenous to tropical America. The name "Persea", given it by the botanist Gärtner, has nothing to do with that Persea which was so highly valued by the Egyptians. In the opinion of Schweinfurt the Persea

honoured by the Egyptians and described by Theophrastus, was *Mimusops Schimperii*. This stately tree, with its oblong, leathery, long-stalked leaves is nearly related to the Ebony. These leaves were folded together and woven into wreaths and garlands for the dead. And they are still found today, often combined with the petals of the blue Lotus (*Nymphaea cocculca*), on mummies whom they decked when laid to rest fifteen hundred years before our era. They symbolised the "Garland of Justification" which the wandering soul received on its entrance to the Taser. The Persea tree has now vanished from Egypt, but it grows in Abyssinia and the neighbouring countries. — Another tropical fruit tree of which one may obtain a good idea in the Mortola Gardens, is the *Psidium* which bears the Guava. The *Psidium*, which belongs to the Myrtaceae, is cultivated in all tropical lands where in some ways it takes the place of our Gooseberry bush; it is very fruitful and is pagated. The plants of this genus grow

*Centranthus ruber.*

of our Gooseberry bush; it is very fruitful and is pagated. The plants of this genus grow into bushes

or small trees; their leaves are evergreen and they bear fruits which vary in size from that of a walnut to that of an egg. The fruits are eaten "au naturel", or with wine and sugar. The flavour of some is like strawberries: others are bitter-sweet: others again have such a penetrating odour that they are not relished by all. Guava Jelly is much esteemed in the tropics, and it is now being introduced into Europe.

The wood of the Diospyros, which belongs to the Ebony family, is of more importance than its fruit. The Kaki tree (*Diospyrus Kaki*) is a native of China and Japan, and may well flourish at La Mortola considering that it can stand the winter, in sheltered places, even on the Rhine. It is a small tree with ovate leaves, whitish-yellow flowers, and round, reddish-yellow fruits about the size of a peach. These are sometimes produced in great numbers, when from a distance the tree appears to be covered with large flowers. The fruits must be over-ripe to acquire their full flavour, which is something between that of plums and apricots. They begin to gather them on the Riviera in the middle of October but the fruits then taste so astringent as to be hardly edible. For this reason they are often left on the trees until the weather becomes too cold, when they are brought into well-ventilated rooms to finish ripening. These fruits are frequently to be seen in the market at Nice, often in such quantities that a dozen may be bought for one franc. In the south east of Asia they are considered a great delicacy when dried, and are called "Kaki Figs". The wood somewhat

resembles that of our Walnut and is used in Japan: but it is far inferior to the timber of *Diospyros Ebenum*, from South India and Ceylon, and other allied species which yield Ebony. The black "heart-wood" of this tree was prized even in ancient times, and it was considered the most valuable of all woods. Not only Theophrastus but the Old Testament also is full of its praises. The remarkable closeness of its grain and its dark colour make it very valuable. Ebony has always been easily distinguished from stained wood by its weight.

The Mango tree, *Mangifera Indica* belonging to the Anacardiaceae, which bears the most delicious fruit of the tropics, will not grow at Mortola: but other trees of this family may be seen there. For instance *Schinus Molle*, a tree with bright green pinnate leaves and bunches of red berries, which is very commonly met with in the gardens and on the roads of the Riviera. It is called "Pepper Tree" because of its berries which are like pepper-corns but it is not related to the real pepper. The true pepper, *Piper nigrum*, comes from a slender East Indian liana, which climbs like the Ivy, clinging to its support by aerial roots. The berries of *Schinus Molle* resemble those of the true pepper both in appearance and flavour. A drink made from these berries in Peru and Brazil is said to taste like wine.

Another interesting plant at La Mortola, belonging to the Anacardiaceae, is *Rhus succedanea* which yields the Japanese wax, and *Rhus zernicifera*, from whose milky juice the Japanese prepare their famous lacquer.

This very poisonous milky juice flows from incisions which are made in the bark. The lacquer is prepared by adding Cinnabar and oil extracted from *Bignonia ocymoides*. *Rhus vernicifera* will grow out of doors in the warmer parts of Germany.

We must not neglect those species of *Zyziphus* which we come across in Mortola Gardens; for to this family belongs the *Zyziphus Lotus* which is indigenous to South Europe. *Zyziphus Lotus* is apparently the bush whose fruits are mentioned by Homer. Its fruits were an important article of food for the poor; and in those days the inhabitants of Tunis and Tripoli were called "Loto-phagi" because they lived principally on them. Many different plants went by the name of Lotos or Lotus in ancient times, and were distinguished by the names of their native countries. Thus *Zyziphus Lotus* was the Cyrenian Lotus, *Nymphaca Lotos* the Egyptian Lotos, *Nelumbium speciosum* the sacred Lotos of the Hindoos, while those "Lotos trees", which adorned the public gardens at Rome, were probably *Celtis australis*, the "Nettle tree", which grows in our own gardens. At least according to old Matthiolus of Siena, the classical commentator of Dioscorides, it was this tree which the Romans called "Lybian Lotus". They liked it because of its ample shade, and because it afforded abundant shelter for the birds. In 92 B. C. there were six Lotos trees in the garden of the orator Crassus on the Palatine Hill. They stood as high as the Palace. It was considered a serious loss, when 150 years later they were destroyed in the conflagration during Nero's reign. *Celtis*

australis is a South European tree; it therefore did well in Rome and ripened its cherry-like stone-fruits "gustu suavi non ingrato", which are at first red and turn black. *Celtis* belongs to the Elm family, while the genus *Zyziphus* belongs to the Rhamnaceae. The fruits of *Zyziphus Lotus* are as large as sloes, and the mealy substance which surrounds the stone can be used for making bread and also for the preparation of a fermented beverage. The favourite Jujubes of commerce were formerly made from the fruits of other species, especially from those of *Zyziphus vulgaris*, a small Syrian tree, and of *Z. jujuba* which comes from India. According to tradition the Crown of Thorns was made from the strongly armed *Zyziphus Spina Christi*, the "Nebeg" or "Ssidr", which is widely distributed in the Vale of Jordan, and round the Dead Sea. The spinous *Gleditschia*, cultivated in our Northern gardens, is called "Christ's Acacia" in Germany and has been also mentioned in connection with the Crown of Thorns. This however involves a gross anachronism, for the *Gleditschias* were brought to Europe from North America as late as the eighteenth century. Plants of the Genus *Zyziphus* lose their leaves in winter; but they deck themselves early with their very dark green foliage. The twigs are slender and pendulous, and when the fruits turn red, the effect is very graceful.

The plant from which we obtain the Capers, *Capparis spinosa* (Fig. p. 65) is a handsome shrub. It may be found all along the Riviera on rocks and old walls but is met with in still greater profusion on the North African coast. It flowers in summer, when the thin, droop-

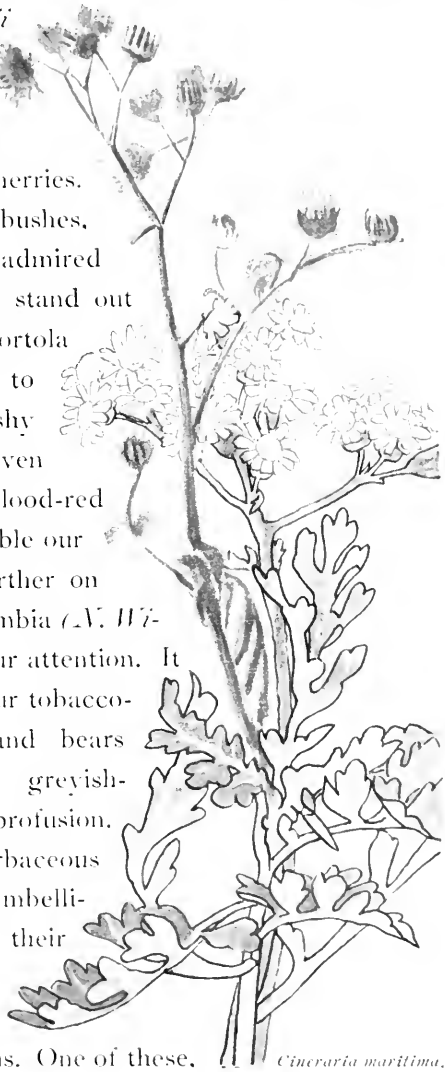
ing branches, with their round, thickish leaves, are adorned with large blossoms of striking beauty. They are an ornament to the Mediterranean flora. The tuft of straggling stamens, with their long, violet filaments set in the snow-white petals, lends to the whole a delicate, one might almost say poetic, appearance. In the spring indeed only flowerless plants are to be seen at La Mortola. In many places on the Riviera, at Grasse for instance, the Caper is grown in quantities. It is the flower-buds, and not the fruits, which are eaten. These buds are gathered in summer and preserved in vinegar. Several thousand kilos of Capers are exported yearly from Provence.

Many a visitor to La Mortola Gardens will pause to admire a kind of Nightshade, *Solanum Melongena*, which is called "Aubergine" in France. It bears fruits the size and shape of a hen's egg; hence the name of "Egg-plant" which is applied to several of the Solanums. Seeing these fruits in La Mortola Gardens reminds us that we have often noticed them before in Italian markets. The purple-fruited Aubergine is the most commonly grown in Italy; but yellow and white varieties are also cultivated. These fruits, when cooked, are often used to garnish roast joints on Italian tables, and also served up as vegetables. In the north our use of the Solanaceous fruits is limited to Tomatoes and Chillies. Nearly all the other fruits of this family are poisonous, and cannot be used as food. Fortunately we have no experience of the "Cannibals' Tomato" which ripens on a shrubby Nightshade called *Solanum anthropophagorum*. According to travellers the Fiji Islanders prepare from this fruit a sauce which

is indispensable to a cannibal feast. Small plantations of these *Solanums* were always found near the places where the cannibals held their feasts. The aborescent *Solanum Warszewiczii* can also be seen at La Mortola, but the fruits of this plant do not grow bigger than cherries.

The *Streptosolen* bushes, which we have already admired at the Point St Louis, stand out conspicuously in Mortola Gardens. It is easy to recognise the big, bushy *Daturas* as *Solanums*, even when they bear huge, blood-red flowers, for they resemble our own Thornapple. Further on a *Nicotiana* from Columbia (*N. Wiggandiioides*), attracts our attention. It is much taller than our tobacco-yielding *Nicotiana*, and bears pendant panicles of greyish-yellow flowers in great profusion.

Among the herbaceous plants many of the Umbelliferae astonish us by their huge size. They are even bigger than the *Angelica* of our gardens. One of these,



Cnicaria maritima.

Ferula communis, the Giant Fennel, has an interesting history of its own. The plant is indigenous to the southern countries of the Mediterranean, where it grows thickly in certain spots, generally near the sea. It will attain a height of three yards in quite a short time, spreading its huge, yellow umbels above the finely dissected leaves. In ancient times walking sticks were made from the stem, and as they are very tough they were used for chastising slaves and children. These were rendered more efficacious by being soaked in water as birch rods were at one time. The name *Ferula* is derived from *ferire* to strike. The plant was sacred to Bacchus and the Thyrsus represented a Fennel rod wound round with Vine and Ivy. The pith is very spongy and is still used in Sicily as tinder. A spark will smoulder for a long while in the pith; and this fact gave rise to the story that Prometheus brought the fire which he stole from Zeus, down to earth in a Fennel stem. Manuscripts have been kept in hollowed out Fennel stems: and most parts of the plant have been used medicinally. It is not surprising then that this plant was valued by the ancients. *Ferula Scorodosma* of the Persian Steppes, a plant six feet high with great yellow umbels, is closely related to the Fennel. It forms regular thickets in the regions between the sea of Aral and the Persian Gulf. The gum-resin known as Asafoetida is extracted chiefly from the roots of this plant. It smells like a mixture of garlic and balsam of Peru. The specific name *scorodosma* comes from *scorodon*, garlic, and *osma*, smell. When sheep feed on this plant in Afghanistan their milk smells strongly of garlic. *Ferula Scorodosma*

was certainly known to the ancients, though it may be difficult to prove that it corresponded to their Silphium and that Asafoetida was their "Laser". Silphium was once much used in medicine: and even today Asafoetida is said to be an important ingredient of the curry with which rice is served in India. In France soup-plates were sometimes rubbed with Asafoetida to flavour the soup.

The grey-leaved, evergreen tree *Eriobotria* or *Photinia japonica*, which bears the "Japanese medlars", is so common in the gardens of the Riviera that we greet it as an old friend at La Mortola. The sub-acid flavour of these fruits is familiar to most of us: they are about the size of plums, and the better sorts when quite ripe are very palatable. The tree appears to be indigenous to China, and according to Rein was brought to England by Sir Joseph Banks in 1787, together with other useful and ornamental plants. It is now to be met with all over Italy, and even on the Lake of Geneva.

Those who know the gardens of the Riviera must have noticed *Photinia serrulata*, a small tree related to the *Eriobotria*. The flat, white panicles of flowers shine out among the big, laurel-like leaves. At a distance the tree looks like our flowering Elder, and at the first glance one would hardly take it for one of the Rosaceae.

Another interesting plant which one may make acquaintance with at La Mortola is the *Quillaja saponaria*, a stately tree with small, stiff leaves, also belonging to the Rosaceae. Its bark, which we obtain from Chile under the name of Panama wood, is rich in saponine, lathers in water like soap, and is commonly used as

such in Chile. With us it is used for washing wool and silk and also for cosmetic purposes.

The Carob, or Locust tree (*Ceratonia siliqua*) is naturally represented in La Mortola gardens, for it is common everywhere on the Riviera. This picturesque tree may be seen here to the best advantage. The ramification resembles that of the oak; but the Carob is easily distinguished by its pari-pinnate, leathery leaves. In spring the pods are still so small and green that they must be searched for among the twigs: later on they become larger and more conspicuous because of their brown colour. The pods are sugary when ripe and are esteemed a great luxury by German children who purchase them at fairs under the name of "Johannisbrod". Here, however, they are used everywhere as food for horses. A sweet juice, tasting like honey, is expressed from the ripe pods, and this is called in the East "Keratameli".

From these Carobs also the Kabyles prepare their national dish, the Tomina, which is made by powdering the pods and adding groats or pea-flour and Olive oil. The seeds are removed. According to legend St. John lived on Carobs in the desert; hence the German name of the tree, "Johannisbrodbaum". The ripe seeds inside the husks are remarkable for the uniformity of their size. For this reason they were formerly used in weighing gold and diamonds, and were the origin of the "Carat". "Carat" is derived from "Keratia", the Greek name for this fruit. The wild Carob tree is indigenous to the East Mediterranean region; but the cultivated

tree, which produces better fruit, appears to have been spread over the southern countries by the Arabs.

A charming *Tropaeolum* (*T. pentaphyllum*) is seen climbing in many places in the Gardens. It is a South Brazilian plant and has scarlet, long-spurred flowers. The small, yellowish-red petals may be discovered between the short, green, calyx tips. The fruit is also very pretty: it consists of three dark violet, one-seeded "berries" which are frequently eaten in Brazil.

Everywhere within the precincts of the garden the ground is gay with the many-coloured *Sparaxis tricolor* and *grandiflora*, an Iris from the Cape. In the spring these flowers are sent in quantities to the North together with bright *Ixias*, yellow *Tritonias* and golden, sweet-scented *Freesias*. Almost every gradation of colour is to be found in the flowers of the *Sparaxis* between scarlet, vermilion, carmine, blood-red and purple: rose-red, lilac and white: brown-red, violet and even black. The flowers are also often chequered and marbled or watered: but generally yellowish and ornamented with dark spots at the base of the corollas. Gay also are the innumerable *Irises* which grow here on all sides, flowers whose characteristic shape is well known to us in the North. The genus takes its name from the rainbow, "Iris", because all colours are represented in the blossoms. In the pictures of the old masters the Iris, together with white Lilies and Roses, figure as attributes of the Queen of Heaven. Under the name of "Lily" it formed part of the arms of the Kings of France. Louis XI conferred it as a badge on Piero de' Medici

and thus a "red lily" entered also into the arms of the town of Florence.

Many attempts have been made to grow Tea and Coffee plants at La Mortola, but neither flourishes and both eventually perish. The Tea plant can, in favourable conditions, grow to a height of fifteen yards: it then looks quite like a Camellia, and in fact belongs, as does that plant, to the Ternströmiaceae. Indeed it is now actually classed in the same genus with the Camellia as *C. Thea*. The name Camellia has an almost poetical sound, perhaps because it reminds one of "La Dame aux Camélias". But its origin is prosaic enough. It is derived from Kamel the family name of a Jesuit father, who brought the Camellia to Spain from Manilla more than 150 years ago. Linnaeus named the plant after this same George Kamel, who also called himself Camelus, and gave it the specific name of "japonica" as it had originally reached Manilla from Japan. The flowers of the Tea tree are very like single Camellias and both have the same profusion of stamens. As long as it survives at La Mortola the Tea tree blossoms in September. The flowers, which are porcelain-white suffused with pink, have not much perfume. The difference between the various sorts of tea are due to the age of the leaves, their treatment, and the season at which they are gathered. According to the Rev. B. C. Henry, *Camellia Thea* is still found wild in large quantities in the interior of the island of Hainan, in South China.

The Arabian Coffee tree, *Coffea arabica*, is a small, evergreen, pyramidal tree between five and six yards

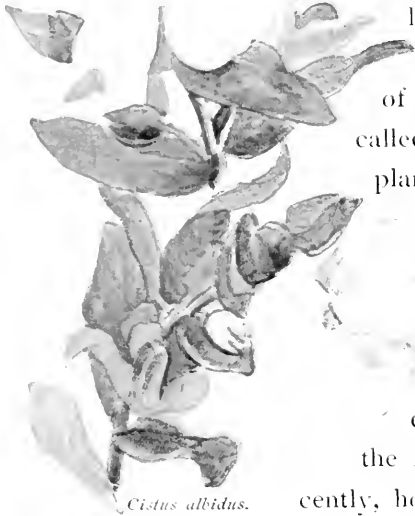
high. The dark leaves are opposite and decussate, and the white, orange-scented flowers are crowded into the axils of the upper leaves. The dark red berries which are the size of cherries, contain the so-called coffee beans. The Coffee plant takes its name from the hilly country in Abyssinia called "Kafa".

The Southern provinces of Upper Abyssinia are generally considered to be the home of the Arabian Coffee plant: recently, however, it has been found

wild near Lake Victoria Nyanza and

in West Africa, so that Central Africa may well have been its original home. Africa has lately given us a second kind of Coffee plant, *Coffea liberica*. This tree grows at a lower elevation than the other, and inhabits the tropical coast districts. It is more sensitive to changes of temperature but stands the sea winds better than the other Coffee plant. The cultivation of this tree is increasing in tropical countries on account of the size and superior aroma of its berries.

A shrub belonging to the Celastraceae, which is cultivated in the Coffee gardens of Arabia and Abyssinia, may be seen at La Mortola. It is much branched,



Cistus albidus.

bears leathery, lanceolate leaves and is called *Catha edulis*. This is the "Khât" or "Cafta" plant whose dried leaves are chewed like tobacco by the Arabs and also used to make tea. In South America the leaves of a plant indigenous to Paraguay and Brazil, *Ilex paraguayensis*, are used as tea. It is one of the Aquifoliaceae and is closely related to the "Khât". The leaves are known there as "Yerba" or "Mate". It is, however, one of the Sterculiaceae, *Sterculia acuminata* or *Cola acuminata*, which provides the African Negro with his "Kola-nuts". These fruits are like Spanish chestnuts and have a slightly bitter flavour. They are much valued by the Negroes for they are said to strengthen the body, to make bad water drinkable, to be a remedy for all sorts of complaints, to appease hunger and raise the spirits. As a matter of fact the Kola-nut contains both Thein, like tea and coffee, and Theobromin like cocoa. The use of this fruit is beginning to extend to England. *Ilex paraguayensis* and *Sterculia acuminata* are not grown at La Mortola; but other species closely resembling them may be seen there.

In La Mortola Gardens, as elsewhere on the Western Riviera, Camellias, Rhododendrons and Azalias do not seem to flourish as well as other plants. The few specimens to be seen are not nearly as fine and well developed as those on the Italian Lakes. The calcareous soil which prevails on this part of the Riviera does not suit them, and moreover they require a damper atmosphere during the growing season.

Fragrant Balsams were an important article of trade in ancient times and in the Middle Ages. The solid

storax used by the Jews as incense was one of these. It was obtained by making incisions in the bark of a small tree, *Styrax officinalis*, which thrives at La Mortola. In foliage the tree resembles the Quince, and its white, sweet-scented flowers with their golden stamens also open in May and June like those of the Quince. Storax is now obtained from several species of Liquidambar, and especially from the Oriental "Amber-tree", *L. orientalis*, which grows in the provinces of Caria and Lycia in Asia Minor. In appearance the tree resembles a Plane. The liquid Balsam obtained from the "Amber-tree" is much used in incense and ointments. The fragrant Myrrh which the ancient Egyptians used in embalming and which later played a part in the religious worship of the Greeks, was obtained, as DeFler and Schweinfurth have proved, from *Balsamodendron abyssinicum*, a tree about ten yards high which grows in South Arabia, Erythrea and northern Abyssinia. This plant is easily recognised by its leaves which consist of one large leaflet with a smaller one on each side. An opaque, yellow sap flows from incisions in the bark and when dried is known as Myrrh. The Boswellias, which yield the incense known as Olibanum, grow in the North-east of tropical Africa and in southern India. They belong with the Balsamodendron to the Burceraceae or Balsam trees. The Roman Catholic Church long ago gave the preference to the gum-resin of these trees as Myrrh was difficult to obtain in sufficient quantities and was not so well adapted for use as incense.

Indigofera tinctoria, which grows in Mortola Gardens, is interesting as one of the principal indigo-yielding

plants. This small, leguminous shrub is indigenous to India, but is now grown in many countries within the tropics and even in a few localities near Naples. It bears imparipinnate leaves and white or pink flowers. The pretty *Indigofera Dosua*, a closely related plant from the Himalayas, is to be seen in our gardens. In autumn the whole bush is covered with a profusion of drooping pink flower clusters. The favourite blue dye known as Indigo is not present as such in *Indigofera* or any other plant. But when the plant is cut and the air admitted to the apparently colourless tissues the exposed surface at once turns blue. The technical process is as follows: the plant is cut up and allowed to ferment in water. The liquid turns a deep yellowish green and is poured off. It is then stirred and beaten so that it may be thoroughly impregnated with the Oxygen of the air. In this manner the Indigo is precipitated as an insoluble powder. This forms the purest and most valuable vegetable dye, and was known to the ancients and prized by them as Indicum. Bagdad was formerly, as London is now, the chief market for this dye.

The familiar outline of the Conifers is prominent among the strange, exotic vegetation of La Mortola Gardens. Even the most southern species are easily recognised as are also the fantastic Araucarias, which are so often grown in our gardens.

We frequently see Cycads in our northern greenhouses, but here many of them grow in the open. The uninitiated will be surprised to learn that the Cycads are classed next to the Conifers. For the Cycad, with

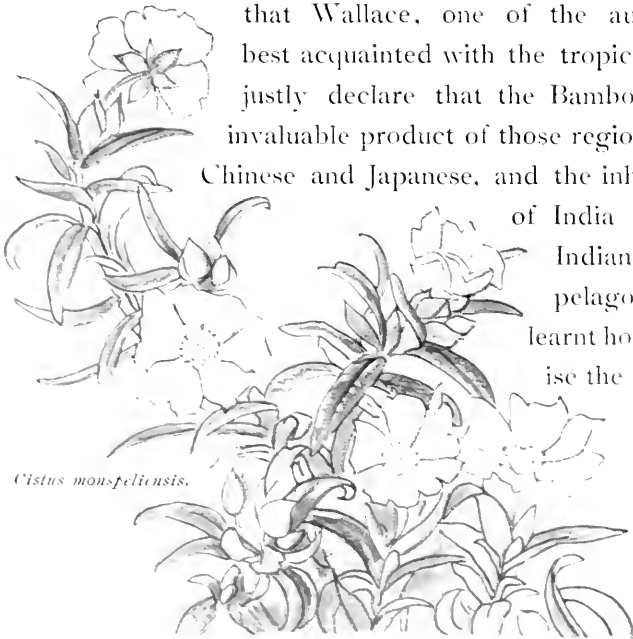
its unbranched stem and terminal rosette of large pinnate leaves, is far more like a Palm. This outward resemblance, which is their only point in common, has led to Cycad leaves being called Palm fronds, and used at funerals as such. This is however a misconception. For according to tradition Palm fronds, and not Cycad leaves, should be laid on coffins; Palms fronds were carried by Christian martyrs, and are represented on the tombs in the Catacombs.

We have already made acquaintance with Palms at Bordighera, but the innumerable Bamboos, which attain a great size in Mortola Gardens, are less familiar. Those who are accustomed to think of grasses as lowly meadow herbs will be surprised to find that the common Bamboo (*Bambusa arundinacea*), which can attain a height of 100 feet, is one of these. In our own wild reed we have a grass of some height. The Bamboos resemble our reed, but while the latter is of very little use to us, there is hardly a plant in hot countries which is applied to such a variety of purposes as is the common Bamboo. The young shoots from the stock are a tasty vegetable. The Chinese like them also prepared as a sweetmeat which is often mixed with ginger. Barriers, fences and all sorts of wattle-work are made from the younger stems, and rulers, measuring-rods, prettily woven baskets, wallets and cases from the split stems. Mats, rain-cloaks and hats are made from the leaves, which are also used in packing tea. Young leaves serve as food for cattle. From the fibres of the stem the Chinese make a much-valued paper which we use in art printing. Both frame

and paper of the Chinese fans consist entirely of Bamboo. In spite of their light weight the hollow stems have remarkable strength and are used for constructions which require great durability. The whole surface of the stems is silicious, which accounts for their lasting so long both above and under ground. And for this reason they are often used as water-pipes and gutters after the partitions have been removed. On the other hand these partitions permit of the single joints of the stem being used as buckets and flower-pots. Bridges, rafts, beds, chairs, tables, carrying-poles, rakes and harrows are all made of Bamboo. Mattresses and furniture are stuffed with its fibres. Bamboo ladders are in special favour. Vessels for food and drink, combs and even surgical instruments are made from it. And, as though to prove that the Bamboo can be put to every possible use, the inhabitants of Borneo and Sumatra make lamps and candles from it. In the former they burn Damara resin, while the latter are made by filling stems with resin when both burn down together. Bamboo sticks are familiar to most of us: they are hollow, jointed shoots from the stock. The slender stems of the East Indian Rattan Palm (*Calamus Rotang*), after their prickly outer covering has been removed, are often sold as Bamboos. But the real trade name for the Rattan cane is "Spanish Cane". The Bamboo supplies useful material for weapons: and lances and javelins of unsurpassed lightness and strength are made from it. The Chinese soldier carries a Bamboo sunshade covered with varnished mulberry-paper. On the other hand the Bamboo contributes not

a little to the enjoyment of life by its adaptability for making musical instruments, for from the hollow internodes of the stem flutes, clarionets and sounding-boards are made. Even strings are made of Bamboo. Indeed C. Schröter tells us that the ancient Chinese constructed a kind of telephone out of Bamboo by which they connected their outposts. The hollows in young stems generally contain clear water, with which travellers in India and in the mountains of Java quench their thirst. The Bamboo plant seldom flowers: but when this occurs there is a rich harvest of grain. The seeds are eaten like rice, or made into bread, and on more than one occasion, as for instance in 1812, a famine has been averted by the timely flowering of the Bamboos. So

that Wallace, one of the authorities best acquainted with the tropics, might justly declare that the Bamboo is an invaluable product of those regions. The Chinese and Japanese, and the inhabitants of India and the Indian Archipelago have learnt how to utilise the Bamboo



Cistus monspeliensis.

to the fullest extent. In China whole villages are built of Bamboo. The effect produced by a fire in one of these villages is said to be very curious. For the air imprisoned in the internodes of the Bamboo stems becomes heated and they explode with loud reports. At a distance this sounds like cannonading, and in this noise the natives of the Molluccas fancy that they hear distinctly "Bamboo, Bamboo".

It is natural that primitive peoples should have attributed hidden healing powers to a plant which was of such universal utility. And accordingly the Chinese use root-stocks, young shoots, the sap, the seeds and certain excrescences of the Bamboo as medicaments. A curious formation, which is found in the hollow internodes of the stem and is called "Tabashir", was much renowned as a remedy. Roman doctors at the time of the Empire used it much, relying on the reputation it had acquired in the East. But in the tenth and eleventh centuries Tabashir became universally known through the Arabian doctors, and it is still considered all over the East as a specially efficacious remedy. When first found in the Bamboo stem Tabashir is a dirty-white, brown, or black lump, but under heat it turns white and is converted into a substance resembling chalcedony. This substance sometimes looks white and opaque, sometimes blueish-white, translucent and iridescent. Tabashir is in reality nothing more than common silica discoloured by some vegetable substance from which it is cleansed by heating. The patient might just as well swallow pure sand instead of the Tabashir

which he has to pay so high a price for in the Bazaars. Given the necessary faith the results should be equal!

Very instructive observations may be made on the young, conelike shoots of the Bamboo when they are pushing up through the earth in spring. They are as thick as a man's arm, and closely covered with sheath-like leaves. Water is exuded between these sheaths, by which means the surrounding earth is moistened and softened, and they develop so rapidly that one is almost able to observe the process with the naked eye. So that the saying becomes a reality — and you can see grass grow! Under specially favourable circumstances a Bamboo shoot will grow half a yard in one day, thus attaining its full height of 65 feet, or more, in a very short time. A luxuriant thicket of Bamboos is one of the most remarkable sights in the Vegetable World; but these plants must be seen in the tropics to realise their importance as a feature in the landscape.

According to the geographer Richter's valuable information and the no less important researches of the botanist Ferdinand Cohn, it seems highly probable that the substance called by the ancients "Saccharum", was not Cane Sugar but Tabashir. Bopp tells us that the Sanscrit root "çarkara" meant, not anything sweet, but something hard and brittle. In ancient India Tabashir was known as "Sakkar Nambu" or Bamboo Stone. When the crystalline Cane Sugar was introduced later the Arabs transferred this word to it because of its resemblance to Tabashir. Edmund O. von Lippmann, in his most thorough and exhaustive "Geschichte des Zuckers", also

comes to the conclusion that the "Saccharon" of the ancient world could not have been our sugar. He shows that solid sugar was not known, even in India, until some time between the third and sixth centuries A. D.

The Sugar Cane (*Saccharum officinarum*) is very like our reed, and, like it, also belongs to the Grasses. Fine specimens may be seen in the Gardens of La Mortola. The Sugar Cane has been cultivated from time immemorial, and as it has been entirely propagated by off-shoots it has almost lost the power of producing seeds. Indeed until a short time ago it was taken for granted that the Sugar Cane never fruited; careful observations, however, particularly in Java, have shown that this sterility is not absolute. The home of the Sugar Cane is probably in Bengal, that province which for long ages has been called the "Garden of India" on account of its inexhaustible fertility. Towards the close of the third century the Sugar Cane reached China from India, and two hundred years later had travelled westward to Gondisapur. This town lay on the river Karun, whose divided waters flowed part into the Tigris and part into the north of the Persian Gulf. The Nestorians fled thither when the Council of Ephesus in 431 A. D. pronounced their teaching to be heretical. They carried to the East the germs of classical culture and of scientific medicine, and particularly the elements of chemistry. As a consequence of the relations of Gondisapur with India the influence of Indian medical lore was felt there, and a school arose which not only adopted the Greek natural sciences and medicine but also improved upon

them considerably. Here, then, the art of refining sugar was apparently discovered, and the word "Kand" introduced to describe the refined sugar.

The Arabs brought the Sugar Cane to Spain in the eighth century, and to Sicily in the ninth. Confectioners existed in Venice as early as 1150. The three most important Sugar-producing countries in the Middle Ages were Syria, Egypt and Cyprus. But their importance vanished in 1498 when Vasco de Gama discovered the direct route to India round the Cape of Good Hope, and the trade in Indian sugar consequently fell to the Portugese. This completely broke the political and commercial supremacy of Venice and her power vanished for ever. The Atlantic Ocean instead of the Mediterranean Sea, now became the route for the commerce of the world. In 1580 the production of sugar began to decline in Sicily as she could no longer hold her own against the competition from over the sea. For about this time American sugar, particularly the Brazilian, was coming into use all over the world and had reached Palermo. The consumption of sugar increased enormously in Europe, and, according to Lippmann, in the year 1600 even Germany had several sugar refineries. But after the 'Thirty Years' War only those in Hamburg seem to have remained. Under Frederic the Great numerous sugar refineries were established in Prussia and were fostered by protective duties.

In 1747 the Chemist Markgraf succeeded in extracting sugar from beetroots. But the manufacture of this product did not extend, chiefly because the supply of saccharine beets was limited. Achard was the first to

remedy this want on his property near Berlin in 1786. And it was he who, under the patronage of Frederic William the Third, started the first real beet-sugar manufactory at Cunern in Silesia in 1801. Other manufactories then followed in Prussia and France, where Delessert was chiefly instrumental in perfecting the process of manufacture. But on the removal of the Continental restrictions most of these beet-sugar factories both in Germany and France failed again, and the new impulse and eventual prosperity of the industry date from about 1820.

The Palazzo Orengo is surrounded by fantastic forms of vegetation; pillar-like *Opuntias*, candelabrum-like *Euphorbias* resembling *Cacti*, *Yuccas* and *Fourcroyas*, *Aloes* and *Agaves*. These rigid plants raise their stems defiantly above the rest, or, when growing close to the ground, force their neighbours aside with their huge rosettes of leaves. *Agave Salmiana* has leaves which attain a length of over two yards. Numerous other *Agaves* send up from the middle of their rosettes flowering stems resembling a gigantic *Asparagus*. The *Fourcroyas* produce in the course of a few weeks an incredible number of greenish-white flowers on their scapes which are a yard high. On a wall east of the house grows a small *Opuntia* (*O. tunicata*) armed with long, white spines. These are enveloped in a delicate sheath to which they owe their colour. They protect the plant effectively from the attacks of animals. And this protection is very necessary in the parched districts of Mexico which these plants inhabit, and where animals

are often at a loss for vegetable food. Plants whose leaves have turned into thorns are very common in these regions. They have green stems which perform the function of the leaves, and these are often swollen to act as a reservoir. For water must be stored as a provision against drought. Horses, when pressed by hunger and thirst, strike off the thorns of these plants with their hoofs. They are then able to get at the juicy substance without injury to themselves; but cattle are often badly hurt in the attempt. Mortola Gardens are remarkably rich in these succulent plants. Of the known species of Aloes about half (seventy) are cultivated here:

there are also sixty different Agaves. Most

of these blossom in spring, while

Cactus and Opuntia do not open

their silky flowers till June.

We could wish that many of

the plants which adorn the

garden in the summer with their

gay colours might blossom at

an earlier season. For the

magnificent Erythras, He-

dichiums, Musas, Strelitzias

and *Sterculia acerifolia*, the

“Flame Tree” of Australia, all flower here

when there is no one to admire their

beauty. It would indeed be worth while to

pay a visit to La Mortola at this season!

A very curious tree, which attracts the

attention of most visitors to the



Cistus salviifolius.

garden, grows close to the house. It bears brownish-yellow flowers which rise from the rosettes of leaves like great bottle-brushes. This tree, *Banksia marcessens*, is one of the Proteaceae and a native of Australia. It would be hard to find anywhere in Europe another specimen so well developed. Close to this tree hangs an ancient Japanese bell which was once tolled in honour of Kwangai, the Buddhist Goddess of Mercy.

What a wonderful view of the coast does the Palazzo Orengo command! The spot seems almost too fair to sojourn in. For what more would be left [to desire? What greater charm could one look forward to? The views which delight the spectator are framed in luxuriant green and the gay colours of many flowers. The eye ranges over the rugged shore and dreamily follows the deep ravine in which the garden seems to stretch away towards the mountains. A stately Palm lends enchantment to the scene. To the east is a dark screen of foliage, but the flowery Pergola soon leads one to the open ridge. The day is declining and Old Bordighera begins to glow in the rosy evening light. What a prospect lies before us! I knew a frail maiden — “a tender blossom nipped before it blew” — who sought a refuge from death at Mentone. To the last this golden dream was present to her fevered sleep. It seemed a prophetic vision of a fairer world. In her northern home the dying girl stretched her arms out longingly towards this imaged scene and a happy smile lit up her pale features.

This Pergola, through which we stroll, is grown over with an almost endless variety of creepers: This collec-

tion must surely be unique! A thousand flowers perfume the evening air. The Banksia Rose is here in perfect loveliness. Everywhere its dainty clusters of semi-double yellow or white flowers gleam among their unarmed foliage. The Riviera may be proud of this beautiful rose which will not grow in the open at home. Nor does it succeed well in greenhouses. The same may be said of the Bougainvillea, that magnificent tropical liana which is so much at home on this part of the Riviera.

Meanwhile the sun has set and faint shades flit over the coast. Old Bordighera looks colourless and lifeless: it is set in a frame of white roses. Foliage and bright flowers grow indistinct in the twilight. Only the Cypresses stand out from the dark mass against the luminous evening sky — those ancient trees bordering with serried rank the path which leads from the upper part of the garden down towards the sea. Has this dark tree, which rises so straight and sternly towards the sky, really a gloomy appearance; or does it arouse sad sentiments in us because it has ever been a symbol of mourning and is so often seen among the tombs? These sombre trees may perhaps be appropriate to the landscape here, if it is true that "La Mortola" is so called from an ancient cemetery. The Cypresses alone preserve the memory of these resting places, now made bright by flower-beds and luxuriant vegetation.

CHAPTER VII.

Above La Mortola Gardens is the Strada Nazionale leading to Mentone. It rises, making a sharp bend in

the ravine, to the Croce della Mortola, where it begins to fall gradually. Most beautiful is this road which follows the slope of the mountain in its wide curve. In spite of the approaching dusk I gathered a bunch of *Moricandia arvensis* (Fig. p. 295) from the road-side. This is a noted habitat for this pretty Crucifer with its violet coloured flowers. It grows abundantly between Mentone and Ventimiglia, also along the Corniche, but disappears suddenly and occurs again, as a rarity only, in a few other localities of southern France. Then I also recognised by its dark inflorescence the Red Valerian (*Centranthus Ruber*, Fig. p. 71) which we like to grow in our gardens. My attention was arrested by *Coriaria myrtifolia* (Fig. p. 125) which covers the slope near the Croce della Mortola in great profusion. The plant was in full bloom. The small flowers cannot be considered beautiful: they are borne in bunches, and are all green excepting the red styles. Yet the structure of the whole flower is so peculiar that it was found necessary to constitute a family, Coriariaceae, for this one genus. This plant contains so much tannin that it is used for tanning and for making a black dye; it is poisonous and therefore avoided by animals. It affects human beings as alcohol does, so that the peasants of the Riviera call it by transference, "embriaghi" — which means "intoxicated".

Below the village of Grimaldi the road passes through an Olive grove, and now it is quite dark in the shadow of the trees. An old tower on the hill can still be distinguished, and near it a modern castle in English-Gothic style. Formerly this belonged to Dr. Bennet.

whose name was well known on the Riviera. After his death others built this Gothic house in the garden which he created. We now reach the Italian "Dogana". Night is drawing on and in Mentone lights are beginning to appear in the houses and the streets. The strand is soon picked out with points of light, fringing the sea like a necklace of fiery pearls. The lines of the "Mignonlied" passed through my mind, and the rhythmic washing of the waves seemed to recall the music of Beethoven's beautiful accompaniment. It is significant that those plants, which in this song of Goethe's conjure up in our minds such vivid pictures of Italy, are not indigenous in that land, which has been cultivated for over two thousand years. They came from the East, like all the great ideas on which our culture is founded, and were developed and improved on this classic soil. Italy received the Lemon and Orange from the Semites, who in their turn had obtained them from India. The Olive, the Fig, the Vine and the Palm were grown by the Semites long before their cultivation penetrated to the West. The Laurel and Myrtle indeed are indigenous in Italy, but their use for ceremonial purposes came across the Mediterranean from the East. The home of the Cypress is not in Italy but in the Greek archipelago, northern Persia, Cilicia and Lebanon. And it has even been questioned, though in this case without reason, whether the "Umbrella Pine", which almost seems to have taken the cloud-cap of Vesuvius as its model, is an Italian plant. As though the great impulse given to horticulture by the discovery of America were also destined to leave its imprint upon Italian soil, the Agave

and Opuntias have been established here. Thus the spiny, glaucous Agaves and the prickly, vivid-green Opuntias, which are so well adapted to the rocky coast of Italy that they seem to have been here from time immemorial, were really not introduced from America until the sixteenth century. It would be difficult to picture Capri without the "Fichi d'India" whose flattened branches grow over all the walls in strange, contorted shapes — and yet they are comparatively recent introductions. The Agaves and Opuntias in the foreground of Preller's illustrations to the *Odyssey* are therefore an anachronism. This however does not detract from the beauty of these pictures, though one cannot escape a certain feeling of unfamiliarity when looking at them. One's sense of historic accuracy is violated; nevertheless these masterly works of art appeal strongly to one's artistic instinct and imagination.

What was the Riviera like before the Olive was cultivated, when there were no Palms or Cypresses and no fragrant Agrumi perfumed the air? Evergreen bushes clothed the slopes and thick pine woods crowned the heights. The whole aspect of the vegetation must have been totally different. For while it was characterised by greater uniformity and the grouping of masses, the landscape, now considered so typically Italian, owes its character to the great variety of conspicuous plants and their effective distribution.

In the time of Alexander the Great — in the fourth century B. C. — the Greeks considered Italy to be quite a primitive land compared with their own country and the Levant. But Marcus Terentius Varro likened it in

the first century B. C. to a vast garden. Pliny complains a hundred years later of the luxury, the effects of which were felt even in horticulture. Vegetables had attained such dimensions as to be quite beyond the reach of the poor. He quotes as an instance the Asparagus, three of which weighed a Roman pound (ca. 300 grammes). Life in this land, which had become transformed into a luxuriant garden and in which all sorts of Eastern plants flourished, could not but have a demoralising effect upon the people. And indeed the shadows gradually deepened on this too luxurious civilisation which already bore within it the germs of destruction.

As I approached Mentone the Mistral began to blow and raised great clouds of dust from the road. In Garavan, under the shelter of the old town, it was, however, quite calm, so that it was possible to sit out in the pleasant gardens of the Hôtel D'Italie till late into the evening. Garavan is effectively sheltered from the west wind by the ridge on which Old Mentone lies and by its close-built houses; and for this reason it is frequented by invalids. For some time past Garavan has had a station of its own which facilitates traffic almost too much, especially for those winter visitors who risk their already impaired health by the injurious excitement of gambling at Monte Carlo.



Cladophora lactevirens.

CHAPTER VIII.

Civilised man owes nearly all the most important stimulants and luxuries derived from the Vegetable World to primitive peoples. Since instinct has been blunted in him by civilisation he can no longer understand the motives which guided the primitive races in their choice of food. He is astonished to learn from chemistry that the Tea of the Chinese, the Mate of the Brazilians, the Coffee and Khât of the Arabs, the Cocoa of the Astecs and the Kola-nut of the Negroes all contain the same stimulating principle. We are able to see in La Mortola Gardens how outwardly different are all these plants which yet contain practically the same properties. But it would be hard to discover, even by the most careful observation, any external character common to them all. Primitive men were, however, not guided by any outward resemblance, but learnt rather as do the wild animals who roam in search of their food through woods and over plains. They were equally unconscious of the reason for their selection.

Most of our economic plants, having been adopted from primitive man so long ago, possess an interesting history.

The use of tea as a beverage is so old in China that a book, "Rhya", written in the twelfth century, mentions it as already long known.

Tea drinking first began to spread in Europe in 1630, under the influence of the Dutch East India Company, and also in consequence of the recommendations of a few Dutch doctors. Tea was said to increase the

vital energy, to strengthen the memory, stimulate the faculties and to thoroughly purify the blood. Those sickening with fever were advised to drink off from forty to fifty cups of tea one after another. In the interesting work of Le Grand d'Aussy, which first appeared in 1782, and which relates the history of the private life of the French ("Histoire de la Vie Privée des Français") we read that tea was known in Paris in 1636 and soon became very popular because the Chancellor Séguier gave it his patronage. It seems that a few people in Paris were so misguided as to smoke tea in the same way as tobacco, and Dr. Bligny boasts that he even made a preserve from it, a "destilliertes Wasser", and two kinds of syrup. In 1700 tea drinking was already universal in England and tea was taxed. Germany owes the introduction of tea to the Dutch doctors of the Great Elector. According to documents published by Flückiger, a handful of tea bought at the Apothecaries of the town of Nordhausen in 1662, cost fifteen Gulden, but in 1689 the same quantity cost only four Groschen in Leipzig. As early as the latter half of the seventeenth century tea had become a common and favourite beverage in Russia. It reached Russia, however, not from Western Europe, but direct through the Asiatic Embassies, and was consequently called "Tschai". This name corresponds to that by which it was known among the Arabs in the eighth century. But in Poland, which was in direct communication with the West, it was called "Herbata", from "herba theae".

The most important constituent of the tea leaf is Caffein. The same principle is contained in the coffee

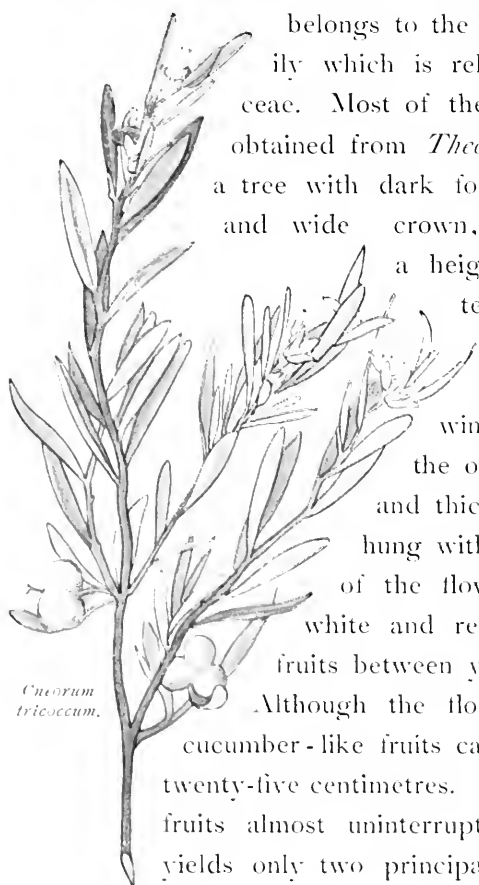
bean, and is very similar to the Theobromin of Cocoa. The Paraguay Tea, or "Mate" and the Kola-nuts also contain Caffein.

The Coffee plant was first cultivated on a large scale by the Arabs, while Europe, with the exception of Turkey, knew nothing of the existence of this beverage until the middle of the seventeenth century. Coffee was first brought to Constantinople from Egypt by Selim I in 1517, and twenty years later there were already several Coffee-houses in that city. It reached Western Europe through the Venetians. Prosper Alpinus, who lived in Egypt as doctor to the Venetian Consul and published his work on Egyptian plants between the years 1591—93, gave the first, although very imperfect, description of the Coffee tree. From Venice, where the first Coffee-house was opened in 1645, the custom of coffee drinking spread rapidly over the whole of Italy. Le Grand d'Aussy informs us that Marseilles was the first town in France in which Coffee-houses were built. In the time of Louis XIV the use of coffee as a beverage came into vogue in Paris, and this was chiefly due to the influence of Soliman Aga, the Envoy of Mohammed III. Le Grand d'Aussy tells us that Soliman ingratiated himself so with the Parisian ladies that it became the fashion to call on him. He had coffee served to the ladies in oriental fashion; slaves handed it to them in shining porcelain cups on gold-fringed serviettes. The foreign furniture of the apartments, the sitting on the floor, the conversation which was carried on by means of an interpreter, — all this Le Grand

d'Aussy thinks was calculated to turn the heads of the French ladies. Soliman's Coffee was talked about on all sides; everyone wished to taste it. At that time it was still very difficult to obtain Coffee beans, one pound costing about forty dollars. In the year 1672 an Armenian called Pascal opened on the Quai de l'École, the first "Café" in Paris -- so called from the beverage sold there. It was a "Boutique" in oriental style, and did not flourish because it was not sufficiently grand for the fine folk who alone drank Coffee at that time. This was recognised by the Florentine Procope, who was a favourite in Paris because he had introduced ice-cream. He started a Café opposite the old Comédie Française, where he provided, besides Coffee, Tea, Cocoa, Ices and various liqueurs. The establishment was, moreover, tastefully decorated and before long proved a great success. There were soon numerous imitators, and in 1676 Paris possessed a vast number of Coffee-houses, whose influence proved very beneficial as it reduced drunkenness. That which Louis XIV., "ce Roi si décent", as Le Grand d'Aussy expresses it, was unable to bring about by severe punishment, the Florentine Procope accomplished. But Coffee was considered to be not entirely uninjurious, and the Marquise de Sévigné consequently advises her daughter, [in a letter dated 1680, to add a little milk to it, "pour en tempérer le danger". In England Coffee is first mentioned by Baco of Verulam as early as 1624. The first Coffee-house in London was started in 1652 by an Armenian named Pasqua, the servant of a Turkish doctor. Berlin followed much later.

for according to Volz the first Coffee-house there was not opened till the year 1721. Many German towns, however, had the lead of Berlin in this respect. Coffee-houses existed in Hamburg in 1679, in Nürnberg and Regensburg in 1686 and in Cologne in 1687. In Vienna a certain Kolschitzky was granted permission to open a Coffee-house in 1683. This was as a reward for the bravery by which he had distinguished himself in the same year when the town was liberated from the Turks. By the middle of the eighteenth century Coffee drinking was universal in Germany, and Coffee was an important article of commerce in Hamburg and Bremen. Frederic the Great sought in vain to limit its consumption. In his endeavour to exclude it from Prussia and "keep the money in the country" he imposed heavy taxes on colonial products which were already dear enough. He even forbade their import altogether or sought to at least monopolise them. Markgraf and other chemists were commissioned to procure substitutes, and this led to the use of Acorns, Barley, Rye and even Turnips and Horse-Chestnuts for Coffee. Chickory Coffee was not yet known of at that time; but, as I understand from what Lippmann writes, first came into use in 1790. These substitutes for Coffee did not find much favour with the public; so in 1789 a Coffee monopoly was established. The ordinary consumer was compelled to buy Coffee ready roasted from the State at twenty-four "lot" for a "thaler", while "roasting licenses" were given to the nobility, the clergy and officials.

The history of Cocoa is very similar to that of Tea and Coffee. The Cocoa tree is more difficult to cultivate than many other tropical plants, for besides a very even and comparatively high temperature, it requires an atmosphere of great and uniform moisture. Its home is thought to be in the countries round the Gulf of Mexico, but it is now grown all over the tropics wherever the above conditions exist. The Cocoa plant



*Coccoloba
tricozum.*

belongs to the Sterculiaceae, a family which is related to the Malvaceae. Most of the Cocoa of trade is obtained from *Theobroma Cacao*. It is a tree with dark foliage, gnarled trunk and wide crown, generally attaining a height of from eight to ten yards. The flowers are produced in a curious way — growing out principally from the old wood. The trunk and thick branches are thus hung with fruit. The colour of the flowers varies between white and red, and that of the fruits between yellow and dark red. Although the flowers are small the cucumber-like fruits can attain a length of twenty-five centimetres. The tree flowers and fruits almost uninterruptedly, but generally yields only two principal crops in the year.

The seeds are embedded in the bitter pulp and arranged in the ripe fruit in five longitudinal rows. The bitter flavour of the seeds is mitigated by a fermenting process, to which they are submitted when they have been freed from the pulp.

Cocoa was known to the Aztecs in Mexico and even to the Toltecs whom they subdued. When the Spaniards conquered Mexico in 1519 they found the cultivation of the Cocoa already well established. Cocoa "nibs" were used in Mexico, and even in the whole of Central America, as coins, in the same way as Pepper was once used in Europe. It was said that when the Spaniards conquered Mexico they found in the state coffers no fewer than two-and-a-half million pounds of these "nibs". In Mexico the roasted Cocoa "nibs" were shelled and powdered and then stirred in cold water to make a brew, and mixed with maize meal. Those who could afford it added spices, vanilla, scented flowers and honey. This decoction, "bouillie assez dégoûtante" says Le Grand d'Aussy, was called "Chokolatl". It is still uncertain whether this word is derived from the Mexican name of the plant "Kakao", or "Kakagnate", or from "Choko" (foam) and "Atl" (water). The Spaniards, who had first tasted Cocoa at the court of Montezuma, soon introduced it to Europe, and today Spain still consumes the greatest quantity of Cocoa. When Carletti returned to Florence in 1606 from his travels in distant countries, during which he visited the West Indies, he brought Cocoa with him. The hot beverage, which was made in Florence from Cocoa-powder, was soon widely used

in the whole of Italy. Cocoa was brought to France in 1615 by Anna of Austria, wife of Louis XIII, but it did not find much favour then. It became more widely used in 1661 under the influence of Maria Theresia of Spain, wife of Louis XIV, who, however, used to hide herself (as the Duchess of Montpensier informs us) when drinking her Cocoa. At that time Cocoa drinking must still have been regarded with disfavour, if not with actual disapproval. In 1671 Madame de Sévigné was able to write to her daughter: "Vous ne vous portez pas bien, le chocolat vous remettra". Cocoa must have lost its repute as a medicine, however, for in a later letter it is complained of as "source de vapeurs et de palpitations". On the other hand a Parisian doctor, Bachot, read a thesis before the faculty in 1684 in which he advocated well prepared Cocoa as one of the most valuable drinks, and said that it might well have served as Nectar and Ambrosia to refresh the Gods. Linnaeus was of the same opinion when he wrote a treatise on Cocoa in 1769 in the "Amoenitates academicae", and gave the Cocoa tree the botanical name of "Theobroma", that is to say "food of the Gods". In 1625 Cocoa began to be used in England, and about the same time it became known in Holland. Bontekoe, physician in ordinary to the Great Elector, brought Cocoa to Berlin. Frederic the Great forbade the introduction of Cocoa and commissioned the same chemist Markgraf, who had previously experimented on Coffee, to make a substitute for Cocoa. Linden flowers were chosen for this purpose, but with very little result.

When the Spaniards came to Peru in the sixteenth century they found yet another stimulant in use there, which the instinct of the natives had discovered — namely Cocain. This principle belongs, as do Caffein and Theobromin, to the vegetable alkaloids. The Incas used to chew Coca leaves in the same way as the Hindoos masticate the Betel nuts, and flavoured these leaves with ashes of the Quinoa plant (*Chenopodium Quinoa*), or with slaked lime, as is done with Betel nuts in India. In moderation Coca leaves stimulate the nervous system: but when used to excess they become injurious. Deterioration of the physical and mental powers sets in and the “Cocquero” may be likened to our inebriate. The Spaniards at first saw only the evil effects of Coca chewing and sought to counteract it by legislation and ecclesiastical prohibition. For this reason the Coca leaves were not introduced into Europe as were other similar stimulants. Public attention was first directed to this alkaloid when Koller of Vienna discovered in 1884 that a solution of Cocain rendered the cornea and the conjunctiva of the eye insensible to touch for some time without injurious effects. Its use in operations on the eye is now universal; and when its power of rendering easily accessible and sensitive nerves of the human body insensible were recognised, it became important in other branches of medicine.

Coca leaves are obtained from a bush which is very like our sloe only considerably larger. They are a vivid green, very thin, elliptical and terminate in a very fine point. The yellowish-white flowers are not striking

because they are small. But the red berries, which are like those of our Cornel tree, are conspicuous among the foliage. The botanical name of the plant is *Erythroxylon Coca*: it is a distinct family limited to this one genus, which however includes many species. The leaves are slightly aromatic and have a pleasantly bitter flavour. The pure alkaloid is a colourless crystal which dissolves only a little in water, easily in alcohol and best in ether.

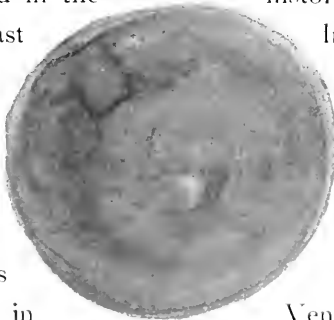
The history of the Clove plant is particularly interesting, for it has played quite an important part in the history of the cultivation of spices. *Eugenia Caryophyllata*, the Clove plant, belongs to the Myrtaceae, as do also the Myrtle, Eucalyptus, Guava and Rose-apple which we see in La Mortola Gardens. It is a shapely, evergreen tree which can grow to a height of thirty feet. The leaves are leathery and shiny, with translucent spots. The flowers are borne in terminal corymbs. The four-angled flower stem spreads out at its apex into four thick calyx limbs which bear the petals and stamens at their base. The corolla falls off when the flower opens; but the buds, or "cloves", are gathered shortly before this happens. These are either picked by hand or knocked off with Bamboo rods. Cloves, then, are the unopened blossoms of a Myrtaceous plant, and are in no way connected with the species of *Dianthus* of our gardens which we call Clove Pinks, although their perfume is alike. When dry the cloves change from a dark red to the familiar brown. Cloves were known to the Chinese before our era. In the fourth century B. C. they were brought to Europe. For a long time it was

thought that the native country of the Clove plant and the Nutmeg was either Java or Ceylon: but these islands were really only stations on the track of the clove-trade. Nicolo de Conti discovered this when he visited Java from India in the first half of the fifteenth century. There he was told that the home of this spice was fifteen days further to the east. The discovery of the Moluccas, which according to O. Wartburg took place in 1511 and is to be attributed to Antonio d'Abreo and Francisco Serrano, enlightened Europe on the origin of the clove. When the Moluccas fell into the hands of the Portugese the spice trade passed to them, and a hundred years later to the Dutch East India Company. This company sought by every possible means to monopolise the production of cloves and nutmegs, and even confined their cultivation to a few islands in order to control it more effectually: on the other islands these spice-trees were extirpated. In order to fetch high prices the company put only a limited quantity onto the market; and when, in consequence of good crops, the store grew too large in 1760 part of it was burnt by the admiralty at Amsterdam. In spite of the strict watch kept by the Dutch, the French Governors of the Mauritius and the Bourbons succeeded in the latter half of the eighteenth century in obtaining possession of Clove and Nutmeg trees and planted them on their islands. The English, during their occupation of the Moluccas from 1795 to 1802, spread the spice plants beyond these islands. And now they are grown over a great part of the tropics. The Clove plant has almost

disappeared from the Moluccas; and only the Nutmeg is still cultivated there to any extent.

The Nutmeg tree, so often mentioned together with the Clove tree, belongs to the genus *Myristica*, and is classed near to the Laurels. The most important of the Nutmegs is *Myristica fragrans*. This tree resembles the Laurel. Its flowers are white or yellowish and are remarkably like those of our Hawthorn. They are not very striking on account of their small size; but the bright yellow apricot-like fruits, which are borne at the same time as the flowers, are very conspicuous. When ripe these fruits burst open and expose the red aril within. This surrounds the dark brown seeds, known as nutmegs, in the form of a laminated covering, and is known by the name of "Mace".

Cinnamon was also once a monopoly of the Portuguese. From them it fell into the hands of the Dutch East India Company, and finally passed to the English East India Company when the English obtained possession of Ceylon in 1796. — As cinnamon, cloves and nutmeg figured in the history of the Netherlands, so did East Indian Pepper in that of Venice. Thus for the sake of their trade in pepper it behoved Venice to hold the Red Sea and Egypt. Quantities of pepper were sold to the Germans at the Fondaco de Tedeschi in Venice. In the Middle Ages, as Flückiger states, the consump-



Codium Bursa.

tion of pepper was enormous. This condiment at last reached such importance that it became an almost universal unit of currency. It served severally for payment of taxes, rents, dues and ransom, and as a costly gift, and was particularly mentioned in wills. In the thirteenth and fourteenth centuries pepper was decidedly the first among spices: it was so expensive that the poorer classes could not afford to use it regularly, and "cher comme poivre" became proverbial. This craving for condiments arose, as Le Grand d'Aussy tells us, from the many indigestible articles of food which were in use at that time. Many fastidious gourmands carried spices with them in order to flavour the food at table according to their own palate. Régnard calls these Epicureans "Docteurs en Soupers".

Ginger is mentioned in Wilhelm Heyd's "Geschichte des Levantehandels im Mittelalter", as being one of the most widely used of the spices of those times — almost as much in request as pepper. This plant, whose native country is India, may also be seen at La Mortola. The green shoots, which are a yard high, spring from the aromatic "root-stock", which is hidden in the soil. The stems resemble those of the Canna which we grow in our gardens, and, like them, bear leaves arranged in two rows; the leaves, however, are smaller. The yellow and violet flowers are borne in the axils of bracts which grow very close together at the apex of the shoots. At La Mortola the Ginger does not blossom, and even in Asia flower-bearing shoots are rarely developed. Pieces of the "root-stock", either peeled or not, form the ginger

of commerce. The ginger which comes from China and is boiled in sugar, is made of tender and carefully peeled "root-stock". Preserved Ginger was imported to Italy in earthenware jars as early as the first century of our era; but the first European to see the plant was Marco Polo when on his travels in China and India. This justly famous traveller won great distinction by his discovery of China. On this account the owner of La Mortola, who has himself spent many years in the "Middle Kingdom", has placed a portrait of Marco Polo in the porch of his villa. It is a glass mosaic on a gold background by Salviati of Venice. As there is no authentic likeness of this great traveller, the artist was left to draw upon his imagination.

CHAPTER IX.

The view of the snow-capped Maritime Alps from the famous "Route de la Corniche", which joins Mentone and Nice, is most impressive. In spring, however, the high mountains are frequently veiled in cloud. A clear day should therefore be chosen for this excursion. Then the scene is of unrivalled beauty. The road begins to rise near Roccabruna and follows the mountain-side in innumerable windings. Occasionally it bends inward abruptly as if about to enter the cliff; then suddenly it reverses its direction as though to dive into the sea. There is a continual succession of changing scenes. Beneath are green valleys and the ever-varying outline of the coast; above the summits of the range. Wherever these divide the snowy heights of the Maritime Alps

burst upon us like a vision in the distance. The Corniche reaches its highest point at La Turbie — the old “Trophea” or “Turris in via”, — about 1650 feet above sea level. The present road, which Napoleon I constructed in 1805, followed the old Roman road. Turbie is now also connected with Monte Carlo by a funicular railway. The frontier between Gaul and Italy once ran through Turbie. The tower, known as the Tower of Augustus, still defies the ravages of time. It rises out of mighty ruins and can be seen at a great distance. The tower with its jagged battlements was built in the fourteenth century out of the hewn stones of the huge monument which the Senate and Roman people erected to Octavius when the battle of Actium made him master of the world. Pliny has preserved for us the inscription which the monument bore on its four sides. Besides the dedication to Caesar Imperator, there were the names of twenty-four Alpine tribes who had been subjugated by the Romans. A statue of the Emperor crowned the monument, which according to old descriptions must have been imposing. Nevertheless later generations did not spare it. The Lombards commenced its destruction; and the Saracens turned it into a fortress. Then for centuries the inhabitants of La Turbie and Monaco treated the ruins as a quarry to obtain building material for their churches and houses. In the twelfth century the Genoese fetched marble from here to adorn their buildings, and what then remained was used for the high altar of the old Cathedral of Nice. From La Turbie Monte Carlo, with all its splendour and misery, looks

like an innocent toy. But even on this elevated spot we are reminded of the serious aspect of life by all the fortifications which France has erected on the mountain tops. Even the highest mountain above Monte Carlo, the Mont Agel, whose summit (about 3,800 feet high) dominates the whole country round, is now crowned with redoubts.

The most beautiful spot on the Corniche seems to me to be where Eza rises on its steep rock midway in the landscape. What an immense expenditure of energy must have been required to build strongholds out of huge hewn blocks poised on these giddy heights between heaven and earth! Surrounded by precipices and secure against all surprises, Niçois and Piedmontese families have ruled this fortress in succession. Miserable dwellings shelter under the strong walls and still stand today crowding round the crumbling ruins. The old splendour has vanished from this spot: the misery has remained. But all this as seen from a distance is gilded by the bright southern sun, and the proud rocks stand out majestically against the blue background of the sea.

Nice continues to grow: it is losing its original Italian character and assuming that of an elegant, cosmopolitan city. It revels in modern luxury. In the winter "Redoutes", "Battles of Flowers", regattas and horse races follow one another in endless succession. The craving for enjoyment has seized upon even the natives. Nice is now as much 'en vogue' as was Baiae of old, and is equally given up to pleasure. How strange that this spot should have been chosen! It has suffered so

many reverses of fortune in past times. Nice has over and over again been plundered and laid waste by Goths, Lombards, Saracens and Provençals; France repeatedly conquered and lost it, but now retains it. Plague has decimated the town: severe frosts have several times destroyed its Olive and Orange groves: and African locusts have frequently devastated them. All this may perhaps account for the frivolity of its population, and may be the reason why Nice has become a metropolis of festivities.

I was, however, not bound for Nice but for the Cap d'Antibes, a spot which had many years before won my heart. An article by Georges Sand in the "Revue des deux mondes" of 1868 first made me acquainted with the beauties of this promontory. Georges Sand visited the garden of the eminent French botanist Thuret, which lies on the ridge of the Cap, and was quite carried away by the prospect which she enjoyed there. In spite of this the Cap d'Antibes has remained comparatively unfrequented, for it stretches far out into the sea and is therefore too exposed to the winds to be suitable as a resort for invalids suffering from chest complaints. The whole chain of the snowy Alps can be seen from the Cap which is but little sheltered from the cold north current from the mountains. On the other hand the Cap does not suffer much from the mistral, as the Montagnes des Maures and the Esterel ward it off. The hard limestone rocks crop up everywhere on the shore and there are few places on the Riviera di Ponente where one suffers less from dust than here. I consider

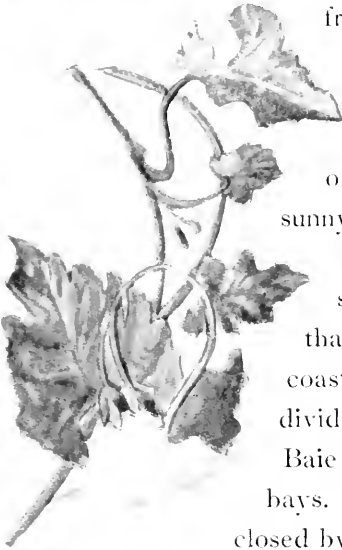


the Cap d'Antibes one of the most lovely spots on the Riviera. Its beauties can be seen to full advantage from the hilly ridge on which the lighthouse and the modest little chapel of Notre Dame de Bon Port stand. The outlook from this spot in clear, sunny weather is truly magnificent.

The Cap d'Antibes stretches so far out into the open sea that one can survey the whole coast from it as from a ship. It divides the Golfe Jouan from the Baie des Anges and overlooks both bays. To the west the wide view is closed by the Esterel range, which rises steeply from the sea with varied outline.

Convolvulus althaeoides.

The Esterel reminds one in its contour of the Sieben Gebirge, the pride of the Rhinelanders; and this resemblance may be explained by the volcanic origin of both ranges. Cannes, which is only an hour's walk from the Cap d'Antibes, is concealed by the tongue of land called La Croisette. The island of Ste. Marguérite - one of the Iles de Lérins - lies out to sea beyond this spit of land. We can clearly see the fort in which the



mysterious "Homme au masque de fer", and later Bazaine, were once imprisoned. One place succeeds another on the coast. Nearest is the little town of Golfe Jouan, in whose well sheltered harbour the French Mediterranean Squadron lies at anchor. Innumerable villas and gardens cover the green hills which slope gently down to the sea. Away to the south-west the Cap d'Antibes stretches another arm into the deep, and on this stand a small fort and the Grand Hôtel. Southward the eye loses itself in the wide expanse of water: eastward we can follow the coast-line to beyond Bordighera, where the mountains at last fade into the distant blue. The houses of Nice form a semi-circle round the Baie des Anges and are scattered on the slopes of the neighbouring hills. In the foreground old Antipolis stands out sharply, surrounded by high walls and moats in mediaeval style, and dominated by the picturesque Fort Carré which Vauban built for its protection. To the north mountain is piled on mountain culminating in the radiant heights of the snow-clad Alps. Thus does this view unite all the most sublime elements that Nature can offer. How charming is the contrast between the vast level of the sea and the diversified outline of the towering mountain giants: in what delicate gradations does the azure blue of the sky merge into the soft green of the coast: how sharply does the gleaming white of the snow stand out against the dark blue of the heavens! We breathe freely amid these surroundings: we feel elevated by these glorious scenes which are reflected in the soul.

The little chapel of Notre Dame de Bon Port is adorned with many an "ex voto" offering. Rings and chains of ships and small boats carved out of wood bear witness to the gratitude of those who have been saved from peril at sea. There is a curious story connected with the Grand Hôtel of the Cap d'Antibes. De Villemessant, the once well known editor of the "Figaro", is said to have had the Hôtel built as a home for authors and artists, who were to work there together stimulated by the inspiring surroundings. This tale was, however, only a "blague" originated by articles in the paper, and further supported by an "Expedition" which the staff of the "Figaro" made to this neighbourhood. The object of the expedition seems however to have been very different to the one put forward. The idea was to start a new resort on the Riviera to rival the rapidly increasing town of Cannes. They wished to imitate Lord Brougham, about whom the "Figaro" of April 25, 1807 relates that he had discovered the town of Cannes — discovered in as much as he found plots of land for sale there at five sous the metre which were soon sold at sixty francs. But the "Figaro" abandoned all its fine plans and the projected "Villa Soleil" was never built. A Russian, however, who was living on the Cap d'Antibes, decided to build the great Hôtel du Cap. The undertaking proved a failure. One tenant succeeded another until at last the establishment was closed. But now that the number of travellers has so much increased, circumstances seem more favourable. The Hôtel is now under skilled and careful management and will doubtless prosper. Its position is uniquely

beautiful. The front windows look out over Golfe Juan and the Esterel range: whilst the back windows command a view of the snowy Alps. The house is surrounded by a large garden which stretches down to the sea. It loses itself in the aromatic Mediterranean underwood, and where this ceases bare, rugged rocks continue the narrow promontory. The sea hurls its waves unceasingly against these rocks, and in heavy storms the surf is driven right over them. The steep slopes of the Cap are weathered into a thousand fantastic shapes, forming shelves, caves, inlets and recesses: so that at any hour of the day a nook can be found sheltered from the sun, and generally from the wind also, where one can sit out with a book. But it is difficult to read much here, for the blue waves dash incessantly against the rocks and disturb one by their splashing. At one time they ripple gently and almost inaudibly, at another they roll up and break with a loud noise as though determined to make themselves heard. Now the water washes up close to you and as it flows back the eye involuntarily follows. Thus hour after hour may be passed in dreamy contemplation on the rocky coast of Antibes, and one day after another slips away unnoticed. The nervous system gains repose and gathers renewed energy for the ever-increasing strain placed upon it in these days. Quite as enjoyable as sitting by the sea-washed rocks is lying among the aromatic bushes with the blue dome of heaven above and a glimpse of the Mediterranean on one side. We spread our rug over Myrtle and Rosemary bushes and recline as on a pillow. It is certainly one of the chief charms of this favoured spot that one

can step direct from the garden into Nature's virgin wilds; for the gay and aromatic shrubs which clothe the coast here were not planted by human hands. They are indigenous and are representative of a type of vegetation, characteristic of the Mediterranean region, which is known as "Maquis" or "Garigue". The Maquis is being gradually encroached upon on this thickly populated coast, and large tracts of it can now only be found in the Montagnes des Maures and the Esterel. In Corsica, however, it may be seen to perfection.

The Cap d'Antibes was formerly noted for its natural wealth of plants, all the most important types of the Provençal flora being gathered together here. Many have had to give way to cultivation, but those that remain are well worthy of closer observation.

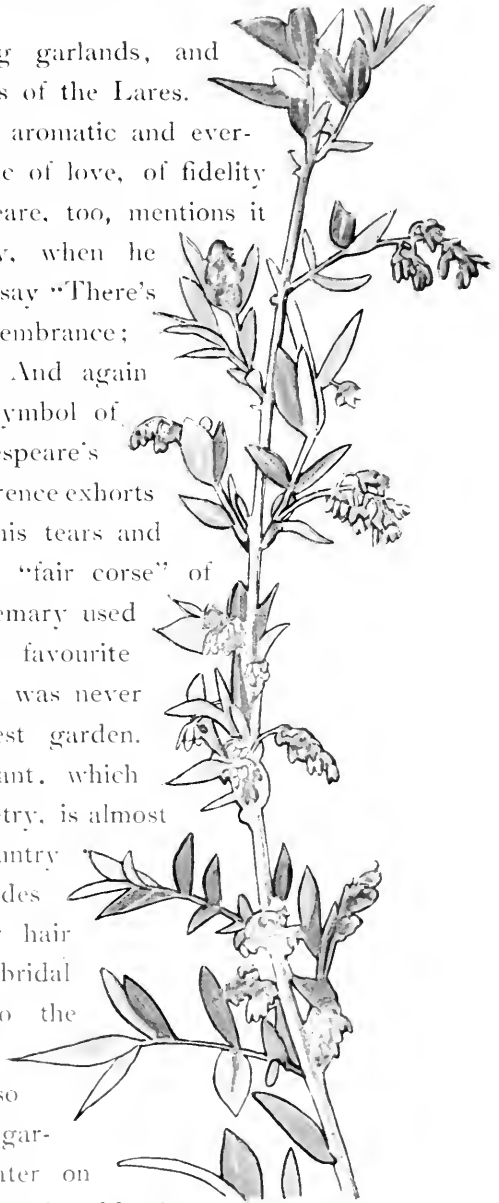
The Maquis, to which we have such easy access here, is characterised by [evergreen bushes. There are even a certain number of trees which do not grow beyond the height of bushes in the Maquis. In the great majority of these shrubs the leaf-surface has been much diminished and the leaves have even disappeared in some of them. Thus the plants are able to resist long drought. In the spring, when there is the necessary moisture, they nearly all bloom at the same time, and form gay gardens where at other times the soil is parched. Aromatic plants predominate in the Maquis. Their aroma protects them from the ravages of animals. This protection is essential in such a dry climate where it is very difficult for the plant to replace the parts which have been destroyed. From each plant you brush in passing quite a flood of perfume

is liberated, and from the ground as we tread volatile essences are wafted upwards. Rosemary (Fig. p. 371), Thyme, Lavender (Fig. p. 257), Cistus (Fig. p. 83), Myrtle and Pistachia (Fig. p. 340), mingle their sweet odours and perfume the air. The general tone of the Maquis is a brownish-green and only the flowers light up its uniform colouring. They are produced in profusion. The delicate blue of the Rosemary is seen side by side with the vivid yellow of the Broom, and the bright colour of the Cistus near the dark violet of the Lavender. In Corsica the hill sides present the appearance of one huge bouquet, and the traveller is intoxicated by the perfume exhaled from this sea of flowers. Not without reason, then, do sailors assert that Corsica can be smelt at a great distance out to sea; and before his death Napoleon on St. Helena longed for the spicy perfume of his native island.

There is indeed but little of the Maquis left on the Cap d'Antibes, and yet on that small tongue of land in front of the garden of the Grand Hôtel one may gather most of the species which constitute the typical Maquis. Among the shrubby plants the Rosemary (Fig. p. 371) strikes us first on account of its perfume, its blue bilateral flowers and its rigid, linear leaves, which are white and felted underneath. It is common everywhere. The sweet smelling oil escapes if the leaves are bruised. This plant is grown in our gardens at home chiefly for bees, because it imparts a fine flavour to the honey. Its distribution north of the Alps was furthered in 812 by a "Kapitulare" of Charles the Great, who ordered the "rosmarinus" to be planted in the Royal Gardens. In olden times Rosemary was

much used for weaving garlands, and thus adorned the images of the Lares.

In the Middle Ages this aromatic and ever-green plant was symbolic of love, of fidelity and of death. Shakespeare, too, mentions it as an emblem of fidelity, when he makes distracted Ophelia say "There's Rosemary, that's for remembrance; pray, love, remember". And again we meet with it as a symbol of death in another of Shakespeare's tragedies, when Friar Laurence exhorts old Capulet to dry up his tears and to lay Rosemary on the "fair corse" of Juliet. In Germany Rosemary used at one time to be the favourite flower of the people and was never absent from the smallest garden. But now-a-days this plant, which has been enshrined in poetry, is almost unknown to them. In the country districts of Germany brides wore Rosemary in their hair and carried it in their bridal bouquets until well into the sixteenth century: and the wedding guests also crowned themselves with garlands of Rosemary. Later on Rosemary was supplanted by Myrtle,



Coriaria myrtifolia.

which was sacred to Aphrodite, and only in a few districts, as in Upper Bavaria, has it been able to hold its own until today. On the other hand, curiously enough, the Myrtle has had to give way to Orange-blossom in Italy, for W. Hörstel, the esteemed writer on the Riviera [in the "Land und Leute" series, tells us that no Italian bride would wear Myrtle; it is used there as stable litter.

Although it is not in blossom in the spring we at once recognise in the Maquis the Myrtle by its shiny, leathery, lanceolate and opposite leaves. A few of these bushes still bear their blueish-black berries which had ripened in the Autumn. When bruised between the fingers the leaves emit a spicy perfume. Because the Myrtle was an emblem of beauty and youth [it was thought that the "Eau d'Ange" which was distilled from its leaves must possess some hidden powers. This water was much used in France to restore faded beauty.

Wherever the Maquis approaches the shore Thyme is found in abundance. It carpets the ground and adorns it with countless, small and modest pink blossoms. Another and taller Labiate, *Lavandula Stoechas* (Fig. p. 257), is much branched and its violet flower spikes rise above the small, softly-felted leaves. What we chiefly notice about it, however, is not the flowers but the tuft of brilliantly coloured bracts at the end of the flower spike. It is these that attract the pollen-carrying insects, for the flowers, which are ranged in vertical rows on the angles of the spike, are only small and insignificant. They are of such a dark violet as to appear almost black.

Cistus bushes abound on all sides. They are less than a yard high, much branched, and thickly covered with brownish-green, viscous leaves. *Cistus monspeliensis* (Fig. p. 89) has white flowers, while *C. albidus* (Fig. p. 83) has much larger pink flowers. The blossoms of these plants are extremely delicate. Their petals are tightly packed and crumpled in the bud. They open and smoothe out in the sunshine and spread their numerous yellow stamens. The flowers fade very rapidly when a twig is plucked, but new ones open on it when placed in water. The Cistus bushes contribute not a little to the characteristic odour of the Maquis at Antibes. The gum which exudes from one or two species of Cistus was formerly a famous remedy much recommended by Greek doctors under the name of Ladanum or Labdanum. Now it is only used for incense. Towards the end of April in many places on the Cap careful searching on the ground under the Cistus bushes may reveal a very curious plant parasitic upon their roots. This remarkable parasite, *Cytinus Hypocistis* (Fig. p. 157), will be known by its flaming red and orange colouring. It has no green leaves; it has dispensed with these because it no longer requires to procure its own nourishment. All the other members of the Rafflesiaceae, to which this *Cytinus* belongs, are tropical. They are all parasitic, and many of them have gigantic blossoms. The largest flower in the world is produced by *Rafflesia Arnoldi*, which grows upon the roots of certain climbing Cistuses in Sumatra. Sometimes these flowers are a yard in diameter. *Cytinus Hypocistis*, however, is content with flowers of small dimensions. When several

shoots grow close together they look as though orange coloured Easter eggs had been placed under a Cistus bush. The Rock-roses (*Helianthemum*) which are members of our own flora, are closely related to the Cistus bushes. Their delicate, sulphur-yellow flowers may be seen here and there in the Maquis. A strongly armed bush with yellow papilionaceous flowers, *Calicotome spinosa* (Fig. p. 61) rises above its neighbours. One can see at a glance that this plant must be closely related to the *Genista acanthoclada*, that scourge of Tartarus which we first saw in La Mortola Gardens. It is so thickly set with sharp, thorn-like, lateral branches that one has to keep clear of it in the Maquis. Another plant belonging to the same order, *Spartium junceum* (Fig. p. 395) the Spanish Broom, is much less unapproachable. This almost leafless plant has green, rush-like branches and large yellow flowers. Baskets, nets and even shoes are woven from the twigs of the Spanish Broom: the bast is used as string and a kind of linen cloth is woven from it.

The Mastic (*Pistacia Lentiscus*, Fig. p. 349), is very common in the Maquis where it remains stunted. But under other conditions it can develop into a tree. A fine Mastic tree with dense, umbrella-shaped crown may be seen from the Golfe Jouan road in the garden of a villa not far from the Grand Hôtel du Cap. The tree is characterised by its dark-green, pari-pinnate, tough, leathery leaves, which are shiny above, and by its resinous smell. The plant is dioecious, bearing either staminate or carpellary flowers. The staminate flowers are conspicuous in spite of their small size because they grow

in close set clusters and are dark red before they are fully developed. The carpellary flowers are less so because green predominates in them. As these flowers have either only stamens or carpels and both sexes are without coloured envelopes they are not adapted to insect fertilization but are wind fertilized. The "mastic", famed of old, is obtained from the Mastic tree. It is, however, not got from the shrubs of the Maquis but from carefully cultivated trees. They succeed best on Chios, which has for this reason been called "Mastic island". The gum which exudes from incisions made in the stem, and also naturally from the twigs, is used chiefly in the East where it is chewed in the same way as are the leaves of the Betel in India. Mastic is said to strengthen the gums and perfume the breath. Turkish ladies of the upper class spend the whole day chewing mastic. With us mastic is used in tooth powder and especially for incense and in the making of varnish.

The evergreen Buckthorn (*Rhamnus alaternus*, Fig. p. 367), is also characteristic of the Maquis. Early in March this shrub bears dense bunches of small greenish-yellow flowers, and later red berries. These latter, however, are not found on every bush as this plant also is dioecious. Careful examination of the leathery leaves of this Buckthorn will show at their base, in the angles of the venation, small protuberances on the upper side. The cavity in these opens on the under side and is arched over with hairs. These structures are called "domatia" because they are usually occupied by minute insects to which they apparently afford shelter. The insects are said on

their side to rid the leaf of fungoid spores and microbes, and are thus of service to the plant. *Rhamnus Alaternus* was known to Theophrastus and Pliny. Its leaves and flowers were used as remedies in ancient times. Buckthorn is grown as an ornamental plant in our gardens.

The northerner who visits the Mediterranean is surprised at the Bush Spurge (*Euphorbia dendroides*) because his own Spurges are only lowly weeds. At Mentone Bush Spurges reach two yards in height, and their trunks can hardly be encircled with both hands. The plant forks repeatedly in the course of its growth and forms a dome-like shrub, which is easily recognised at a distance by its yellow colour. It is one of the most curious plant-forms on the Riviera and is found not only in the Maquis but distributed over the whole coast. Dioscorides and Pliny both mention it. During the summer drought this Spurge sheds its leaves, remaining bare as do our indigenous northern trees in winter. The natives of the Riviera throw twigs of this Spurge into water to stupify the fish, and we are told of a similar practice in Greece. *Euphorbia spinosa* (Fig. p. 181), another much smaller, bushy Spurge, grows close to the ground in the Maquis. It is yellow, like the larger species, and derives its name from the tough spines formed by the dead twigs. *Passerina hirsuta* (Fig. p. 325), one of the Thymelaceae which is uncommon elsewhere, may be known by its small, fleshy, crowded leaves, its hairy white drooping twigs, and small, yellow, inconspicuous flowers. It is common here and will at once be noticed because of its characteristic habit. Only solitary specimens of the Strawberry

Tree (*Ar-*
butus Unedo,

Fig. p. 37) are found

here, but it is

usually ab-

undant in the

Maquis. Its

strawberry-like fruits

are sold in the

markets of the Riviera. The Ar-

butus does not look much like a

Heath, nevertheless it belongs

to the same family, the Erica-

ceae. There is no resemblance in the

foliage, but the structure of the flowers

is similar. These latter are bell-shaped, like those of

the Heath, but much larger, and hang down in pinkish-

white panicles. The evergreen, ovate leaves, serrated

at the edge, are very like those of the Laurel. The

fruits ripen very slowly, and may often be seen on the

tree at the same time as the flowers. They are subacid

but insipid; hence Pliny calls them "Unedo" from "unum

tantum edo" (I eat only one). Arbutus twigs served

the Roman populace as charms. The posts and

thresholds of doors were struck three times with

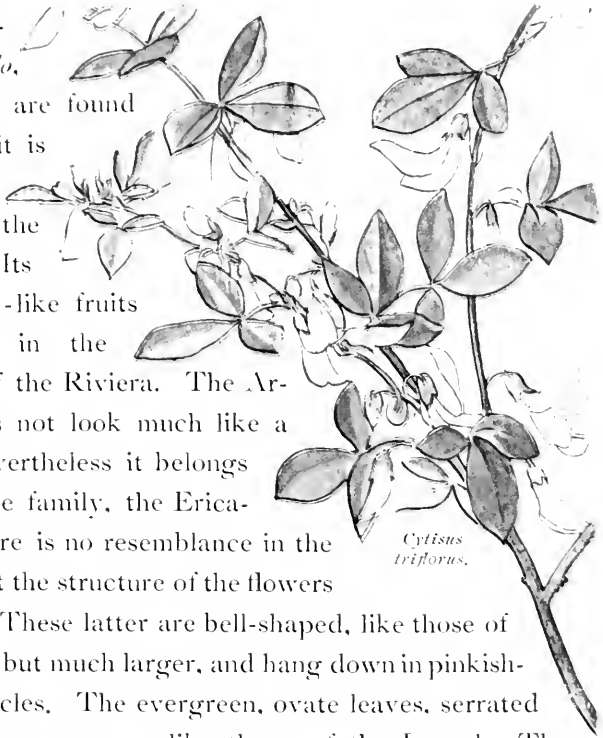
these twigs to prevent the entrance of vampires,

which were believed to suck the heart-blood from

children in their cradles. A twig of the lucky White-

thorn placed in the bedroom window likewise kept off

these unholy creatures.



Cytisus
triflorus.

The Evergreen Oak (*Quercus Ilex*, Fig. p. 363) is plentiful everywhere in the Maquis, where it remains a shrub. Its sharply pointed, oval leaves are grey beneath and may be recognised by this peculiarity. The edges of the leaves may be either serrate or entire. Outside the Maquis the Evergreen Oak grows to a fine tree. In ancient Rome the Civic Crown was woven from its twigs. Pliny says that these wreaths were valued above all others — even the most costly. In the Maquis, side by side with the Evergreen Oak, is found the Kermes Oak (*Quercus coccifera*, Fig. p. 359) which never becomes arborescent here. It is rare on the Cap d'Antibes but much commoner in the Maquis of the Esterel. There the females of the Kermes Cochineal (*Lecanium Illicis*) are still collected on the twigs of this tree before they lay their eggs. These insects are a reddish-brown, the size of lentils and full of a red liquid. A crimson lacquer is made from them as well as a crimson dye; but this industry is now no longer profitable. The Kermes is distinguished from the Evergreen Oak by its small leaves which are green beneath and have spinous, serrate edges. The stem is also more branched and generally keeps close to the ground.

A slender Asparagus (*A. acutifolius*, Fig. p. 45), may be found trailing over some of the bushes in the Maquis. The leafless branches stand out stiffly from the woody, flexible stems, and needle-like twigs take the place of leaves. This Asparagus is much used on the Riviera for decorating and it is twined round mirrors and chandeliers in the dining rooms. The young shoots are eaten

like our Asparagus. In Sicily the tasty young shoots of the prickly "Butcher's Broom" (*Ruscus aculeatus*) are eaten as "Asparagus"; and these were considered as delicacies by the ancients.

Another plant always to be met with in the Maquis, and which grows here on the Cap, is the Tree Heath, (*Erica arborca*, Fig. p. 175). This Erica, which in Greece was considered an antidote to snake-bite, is very like our own Heath but it grows up more than a yard above the surrounding plants. Clusters of small, white and nearly globular flowers with deep violet stamens hanging out of them, deck the twigs in countless numbers. Though not efficacious against snake-bite it is a favourite with bees, and its woody roots are used for carving and especially for making pipes.

We must not omit the Phillyrea (*Phillyrea angustifolia*, Fig. p. 343) as it is also one of the Maquis plants. This bush grows to a height of from one to two yards and is characterised by its linear-lanceolate, leathery leaves, inclining upwards, and its small white flowers which are crowded together in close set clusters. This bush belongs to the same family as the Olive tree which it somewhat resembles. *Cneorum tricoccum* (Fig. p. 107), a bush plentiful on the Cap, is botanically interesting as belonging to a family not commonly represented here — the Cneoraceae. It has shiny, green, lancet-shaped leaves and bears small, yellow flowers in twos or threes at the end of the twigs. This plant is grown in many gardens on the Riviera for its graceful appearance and it is even to be seen in the formal Casino gardens at Monte Carlo.

The Juniper, laden with big reddish berries, which grows in the Maquis is *J. Oxycedrus* (Fig. p. 245). Its berries are used in the East and in Greece for the same purpose as those of our own Juniper. The wood resists the action of the atmosphere and the attacks of wood-worms, and images of the Gods were made out of it in ancient times.

In places where the vegetation is less dense the *Globularia Alypum* (Fig. p. 207) raises its pretty blue flower-heads which grow at the ends of its twigs.

Where the ground is so poor that other plants cannot subsist the *Cladonia alpicornis* forms a thick carpet. This grey lichen is distributed over the whole of Europe, N. Africa, N. America and part of Asia.

Everywhere in the Maquis at Antibes we find the shrubby Olive. Like the evergreen Oak the Olive has adapted itself to the Maquis and become a shrub. It has altered so much that even the ancients distinguished it by the name of *Oleaster*.

The Oleaster, like the Myrtle, ventures very close down to the beach. They brave the violent winds from the sea and are often rounded by these as though they had been trimmed by hand. The branches nearest the sea are sometimes actually dead. The twigs of the Olive, the emblem of Peace, become spinous in the Oleaster. They are so sharp and formidable that they make the plant almost unapproachable.

The *Smilax aspera* (Fig. p. 387), called "Italienische Stechwinde" in German, is always associated with the shrubs of the Maquis however close to the shore they

may grow, for it finds shelter among their branches. Both leaves and stem are set with spines which facilitate its climbing. The *Smilax* flowers in the autumn, and in the spring is adorned with clusters of red berries. On account of their sweet perfume flowering sprays of this plant were twined into garlands with Ivy for the Bacchic festivals.

This sketch may serve to give those who are interested in the various aspects of vegetable life an idea of the character of the Maquis, that typical development of the Mediterranean flora.

In close proximity to the sea the reddish-brown earth of the Cap is coloured an almost uniform grey by quantities of a much-branched, very hairy, prostrate shrub. Only the withered inflorescences are to be found on this plant in spring, but its odour is so characteristic that we at once recognise it as *Helichrysum Stoechas* (Fig. p. 227). It is a spicy smell like a mixture of Wormwood and Liquorice. At every step we take, especially towards evening, the volatile oil is liberated from these plants, and we walk, as it were, in a cloud of perfume. This *Helichrysum* belongs to the same family as those plants called "Immortels", and "Strohblumen" in German. In the summer it bears shiny, yellow, scarious capitula united into flat-topped panicles, which were used even by the ancients to weave "everlasting" wreaths. In the spring the uniform grey of the *Helichrysum* bushes on the shore is relieved by the bright yellow flowers of the Bird's foot Trefoil (*Lotus ornithopodioides*, Fig. p. 283), which lie close on the stones and cover them in great profusion.

On the small storm-lashed promontory, which projects a few hundred yards further into the sea and is known as Pointe de l'Islette, we find that all vegetable life gradually vanishes. In this exposed position the struggle for existence becomes ever harder for plants, and they show outward signs of the peril in which they live. Since all plants which rise above the ground here are liable to be destroyed, advantage is taken of each crevice: they lie prostrate, their stems are creeping and knotted, and often present the most extraordinary appearance. The character of the vegetation is remarkably like that of alpine regions, and we might imagine ourselves to be thousands of feet above sea level were it not for the blue sea washing up so close to us. The stunted Maquis plants disappear gradually, for even they can exist here only in sheltered clefts in the rocks. In many places we still find a yellow Lichen, the *Lecidia*, forming round spots on the bare rocks. Further on, where the sea washes up on all sides into the interstices of the weather-beaten rocks, we are confronted by quite different representatives of the Vegetable World — the marine algae, those dwellers in the deep, which are so rich in form and colour.

On our return we are struck by the sharp contrast between this barren promontory and the profusion of foreign plants in the Hôtel garden. In front of the house stand exceptionally fine bushes of "Marguérites" (*Chrysanthemum frutescens*) from the Canaries. They are rounded, nearly two yards high and crowded with thousands of white, starlike, rayed flower-heads. *Teuc-*



*Cystoseira
ericoides.*

rium fruticans forms hedges everywhere in these gardens. This is a North-African shrub with silver-grey foliage and graceful blue labiate flowers. *Malvastrum capense*, a Mallow with dark-red, medium-sized flowers, is commonly met with: also the South-African *Ostcospermum moniliferum*, a big shrubby Composite with yellow flower-heads: and *Polygala myrtifolia* from the Cape, a shrub familiar in our greenhouses. It bears an abundance of large bright red flowers bordered with purple.

These resemble the papilionaceous type although they belong to a very different order, the Milkwort or Polygala family. The South-African *Melianthus major* has spread widely in the gardens round the Hôtel. It is a rather ornamental plant, of peculiar structure and appearance, which gives its name to the order.

In botanical characters it approaches the Balsamineae. *Melianthus major* is a shrubby plant reaching a height of two yards, and bearing large, glaucous, pinnate leaves with serrated edges, and terminal clusters of close-set reddish-brown flowers. The odour of these is not very pleasant. In shape they remind one of winged insects. They secrete such a quantity of nectar that it falls in drops if the plant is shaken.

Sun-birds, (*Nectarinia*), hover round these plants to suck the honey and thus effect pollination. This fact adds interest to the plant, as flowers pollinated by birds are rare. The thick fleshy stems and leaves of the South-African Mesembryanthemum (*M. acinaciforme*) hang over the terraces and open their large, brilliant, red flowers in the sunshine. Side by side with these grows the yellow-flowered species, *M. edule*, which has somewhat smaller leaves and flowers. The fleshy fruits of these plants are eaten in their native country as "Hottentot's Figs". The Hottentots are said to preserve the juicy leaves in vinegar like Gherkins.

In the immediate neighbourhood of the house the garden is carefully kept, but the outlying part is more or less left to itself. Here a curious struggle for space, light and subsistence takes place between plants of all latitudes brought together by chance. The Australian Casuarinas are crowded by the American Pepper-tree; the Japanese Pittosporum competes with the Mediterranean Tamarisk. The indigenous shrubs have here and there to give way to the Australian Acacias and Eucalypti, the African, yellow-flowered, shrubby Medic (*M. arborea*) and the strongly-armed Genistas (*G. ferax*). But amongst all these the Aleppo Pine (*Pinus halepensis*), with delicate needles, and the Maritime Pine (*Pinus Pinaster*) with more rigid leaves, assert themselves and form a transition to the Maquis.

These two Pines, met with everywhere on the Riviera, may also be distinguished by their cones; for those of the Aleppo are smaller and less substantial than

those of the Maritime Pine. The Aleppo predominates on the Western Riviera, for the calcareous soil suits it; but the Maritime Pine prefers quartz and granite soil. The cones of the Maritime Pine are used on the Riviera for lighting fires. Those of the *P. Pinca*, which are roundish and considerably larger, are often used for the same purpose.

The "Procession caterpillar", larva of the moth *Cnethocampa Pilocampa*, is only too common among the Pines on the Cap d'Antibes and elsewhere on the Riviera. These caterpillars are black with brown stripes. Hundreds of them walk in single file over the roads, one touching the other and forming a long string which moves forward like a living chain. If the chain is broken the front portion halts and the back advances. The first larva of the rear section seeks to re-form the line by feeling about. If he succeeds in finding the front section the whole chain moves on again. These caterpillars cause great damage to the Pine trees; they often eat them quite bare. During the day they remain in their large grey nests, which are so conspicuous on the Pines and look so silky in the sunshine. At night they leave their nests in search of food. The caterpillars we see crawling on the ground are seeking a suitable spot in which to pupate. It is dangerous to touch either the caterpillars or their nests, for the hairs penetrate the skin and set up serious inflammation. Therefore those people who have to rid the trees of these nests keep to the windward side and take every precaution. The best plan is to pour petroleum into the nests without removing

them. The nests of these caterpillars up among the twigs and their long processions on the ground can hardly escape the notice of visitors to the Riviera. But only the initiated are acquainted with the imago into which they develop. The moths are grey with darker spots and narrow stripes and are neither striking nor pretty. They fly in the height of summer and lay their eggs on the underside of the Pine needles, covering them with thin, silvery-grey scales.

CHAPTER X.

Those who have witnessed a storm on the Cap d'Antibes will never forget it. The magnificent spectacle of the unchained elements compensates one for the bad weather which has gone before. A strong wind begins to blow from the sea, the air becomes marvelously clear and all objects appear nearer. The outlines of the mountains look as though they were traced with pencil on the sky. In places sheltered from the wind it is oppressively sultry. Then the horizon is enveloped in lurid mist. The wind gradually subsides and the whole sky becomes overcast. Large drops of rain patter against the window-panes. This continues for several days and keeps everyone indoors. The temperature falls gradually and beside the scanty parlour fire one longs for the warmer stove at home. But next morning we awake dazzled by the blue and radiant sky. We hasten out and inhale the pure, refreshing air. All the plants are still shining with the recent rain, and sparkling like diamonds the drops run off the leaves. The surf dashes

heavily against the rocks on the shore as though seeking to shatter them. The thundering roar of the impact can be heard from afar. The point of the Cap can no longer be reached as the waves are washing right over it. Out on the sky-line a billow rises like a great wall. Swelling as it approaches, it hurls itself onto the land to fall back broken and covered with white foam. It meets another equally threatening wave and both disappear for awhile. Then a calm ensues, for an advancing and a retreating wave have met and annulled each other. But when two advancing waves combine they surge up mightily and dash themselves on the rocks with curving crest. Masses of water are thrown aloft and sea and sky are mingled in the chaos. With a dull roar as of heavy cannonading the waves surge through the caves which they themselves have fashioned in the rocks. All round us there is a gurgling, groaning sound from the numberless streamlets making their way back to the sea through the clefts and stony fissures of the rock. Beset on all sides by the raging elements, we seem almost to be floating in the open sea, and are gripped by the terror of the storm. How pleasant it is to feel the firm ground beneath one's feet!

It is many days before the agitation of the waves subsides and the broad surface of the sea returns to peace and rest. Ever changing, yet ever the same, this divine Mediterranean fascinates and delights us!

CHAPTER XI.

The walks around the bays, on the slopes of the hills, and among the gardens of the Cap d'Antibes are

very beautiful and so varied that they invite us to new excursions daily. The views of the coast, the mountain range and the snowy summits of the Alps change unceasingly, and we are ever pleasantly surprised by some specially picturesque grouping of rocks or new aspects of vegetation. Even a walk on the high road, elsewhere so monotonous, is enjoyable on this favoured peninsula — at least on the road which crosses the Cap, for it runs through endless plantations of Anemones, Ranunculi, Wallflowers, Stocks, *Narcissus Tazetta* and Mignonette. The eye is particularly attracted by the splendour of the Anemones and Ranunculi, which can nowhere be seen in greater perfection. And our sense of smell is gratified at the same time by the perfume wafted from this sea of flowers, over which butterflies — those flowers of the air — hover in great numbers. Orange-tips, the “Glory of Provence” (*Anthocharis Euphenoïdes*, Fig. p. 143), fly swiftly by, and black-striped Swallow-tails (*Papilio Podalirius*) sail leisurely to and fro. But it is the Cleopatra (*Rhodocera Cleopatra*, Fig. p. 143) a South European Brimstone with front wings suffused with brilliant orange, which strikes us most by its beauty.

Great quantities of cut flowers are dispatched to the North daily from the Cap d'Antibes, which also supplies the neighbouring markets on the Riviera. We realise how much flowers are used on the Riviera itself when we have seen the flower-markets in the towns and witnessed some of the floral fêtes. The export of flowers to the North has assumed enormous proportions. The

rise of this industry dates back no further than 1850 on the Riviera. Before that flowers were grown only for the scent manufactories. The gay plantations begin near Toulon and extend as far as Genoa. The French side of the Riviera has already been converted into one continuous flower-garden. At Ollioules, near Toulon, the Roman Hyacinth flowers very early in the spring and finds its way to the northern markets before the Dutch Hyacinth appears. Narcissi, Jonquils, Tazettas and white and red Carnations soon follow at Ollioules. At Grasse, Cannes and Antibes Anemones and Ranunculi predominate. These are of unusual size and colour. The size attained by the Carnations (known as *Dianthus Caryophyllus flore pleno*, var. *Marguérite*), in this favoured climate is astonishing. Many of the blossoms look like small posies. Besides the above-mentioned, Stocks, Wallflowers, Mignonette, Sparaxis, Ixias, Gladioli and the Tea Rose — the queen of flowers — are grown.

The dark yellow *Safrano* is the handsomest of the Tea Roses: it withstands rough weather

and shows buds even

in December. Equally

satisfactory are

many of the Monthly

Roses, the white *Bengal-*

Ducher and the red *Bengal-*

Sanglant, which are prefer-

red on account of their early



*Anthocharis
Euphenoides.*



Rhodocera Cleopatra.

flowering. The more delicate kinds, such as the *Maréchal Niel*, *Marie van Houtte*, *Gloire de Dijon*, *Souvenir de la Malmaison*, *Paul Nabonmand* and *La France*, which adorn our gardens in summer, thrive on sunny walls and under glass. Large areas are thus covered in at Cannes and Antibes. Hundreds of thousands of these flowers blossom in a single day in spring at these two places — often when there is no possibility of turning them to account. In Cannes *Acacia dealbata* is being more and more cultivated and exported to the North. Its balls of flowers united into sprays and its delicately pinnate leaves have obtained for it the name of “Mimosa” in the trade. The tree grows with astonishing rapidity, attaining a height of ten yards in five or six years. As early as January these trees are smothered in yellow flowers. *Acacia retinoides* is sent to Germany in quantities; it has balls of flowers like the other species, but simple, leathery, lanceolate leaves. In reality these leaf-like organs are not leaves but flattened leaf-stalks. For comparison with other species of *Acacia* shows that the leaf-blades have disappeared and been replaced by the dilated petioles. Structures of this kind are called phyllodes. *Acacia longifolia*, which is often seen in our northern flower-shops, also has these phyllodes. This species is easily distinguished, for the flowers, instead of being united into balls, form catkin-like inflorescences resembling caterpillars. The flowers of all these *Acacias* are yellow. They blossom in succession on the Riviera, *Acacia cultriformis* being last. This does not reach its full perfection until March. Its inflorescence is spherical

and its phyllodes are short, broad and lozenge-shaped. The universal favourite — Mignonette — is always among the flowers sent away. Violets do not stand a long journey well, but great quantities of them are used on the Riviera itself. They are also candied and made into sweetmeats. Blue Cornflowers, Tuberoses, Wall-flowers, Stocks, Gladioli, white Allium, Ixias and perfumed Freesias are all exported. Visitors will be struck by a large Iris often to be seen in the windows of flower shops on the Riviera. This *Iris Susiana* is minutely speckled with purple and is a regular mourning-flower. The white and yellow flowers of the big Chrysanthemum (*C. frutescens*) are much in request, especially the yellow ones, which are known as "Étoile d'or". They find their way chiefly to England, where the demand for these flowers continues until June — as long as the London season lasts. It has been calculated that Cannes and Antibes alone exported more than forty thousand pounds worth of cut flowers to the North in one winter. Their sale on the Riviera itself is much greater than this. Keen competition is always inciting inventive minds to produce new "creations" for the flower-market. Thus green Carnations made their appearance in the Paris markets as a novelty, and in fact no such thing had been seen before unless it be in the pictures of the Impressionists. But it transpired that these green Carnations were not entirely natural products. They were obtained by keeping white Carnations with their stalks in a coloured solution for a day, or longer. To succeed thoroughly the end of the stalk must be several times

re-cut while under the solution. Other colours can be obtained in the same manner, but colouring matter must be chosen which can be absorbed by the plant. The most successful of these experiments is the tinting of white flowers with red by eosin.

There is much traffic on the roads of the Cap d'Antibes on Tuesdays and Fridays. Carriages come from all parts bringing visitors to Eilen Rock: this garden is open on the afternoons of those days. The garden includes the first promontory of the Cap east of the Grand Hôtel. It is terminated by steep rocks which fall precipitously to the sea. Steps and paths in the rock lead down to the water. Owing to its prominent position the garden commands splendid views: it is moreover rich in beautiful plants. Laid out with much taste and skill the garden delights many a visitor: but to the nature-lover it will perhaps seem a little artificial, especially amid these grand surroundings.

On Thursdays also the Thuret gardens, which so charmed Georges Sand, are open from early morning. The French Government now uses this as a Botanic Garden for experiments in acclimatisation, and there are very many valuable plants in it. We find here even finer specimens of some of the species we had admired at La Mortola. The plants from S. W. Africa, S. W. Australia, Central China and California thrive best in this garden as elsewhere on the Riviera, for the Mediterranean climate most closely resembles that of those regions. We also see plants from other countries, but these flourish mainly by reason of the care bestowed upon them.

By turning down westward from the Thuret Gardens the road which leads to Golfe Jouan is easily reached. Following this we come to the Pine-wood which stretches along the coast. This wood was once the pride of the Cap, but only fragments of it now remain. A company has bought the land, and through the Pine-wood a road has been made which connects Cannes and the Cap d'Antibes. The wood itself has been enclosed by a wire fence and divided into lots. But many a mighty tree still stands under whose shadow we realise the former grandeur of this grove.

CHAPTER XII.

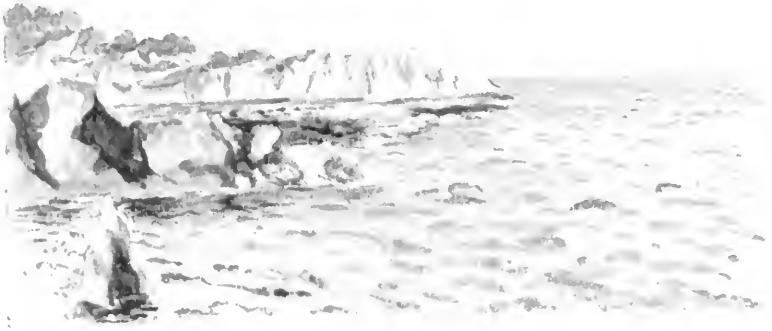
It was now mid April and duty called me home. A wondrous bright spring day was drawing to its close. Desirous of contemplating the sunset once more from the highest point on the Cap, I took the shortest way through the Pines to the eastern shore intending to ascend to the lighthouse from the side nearest the sea. I was soon surrounded by the aromatic plants of the Maquis: the flowers of the Rosemary (Fig. p. 371) and Cistus (Fig. p. 83) and the shining leaves of the Pistachias (Fig. p. 349). The flame coloured *Cytinus Hypocistis* (Fig. p. 157) was growing in profusion on the roots of the Cistus bushes, forming a deep orange patch on the red-brown earth. Most of the shoots were fully developed, so that the bracts were no longer crowded together as in the bud, and the flowers were open. Cistus still lined the path mingled with Lavender (Fig. p. 257) and Thyme which strongly perfumed the air. A blue *Salvia*, *S. horminoides* (Fig. p. 375), grew

in all the clearings, also a charming, silvery-grey, hairy, Mediterranean Bindweed, *Convolvulus althaeoides*, Fig. p. 119), which was already closing its pink corollas in anticipation of approaching nightfall. Beside a dilapidated coast-guard shelter on the shore I saw several plants of the tree Mallow (*Lavatera arborca*, Fig. p. 263). This fine Mallow bears a profusion of violet flowers in spring and has the appearance of a small tree. It is not unfrequently met with on the Cap. Though not originally wild here it is nevertheless thoroughly established, as is the shrubby, glaucous *Atriplex Halimus* which often forms thick hedges by the sea. On the ascent towards the lighthouse I also found a Jasmine (*J. fruticans*, Fig. p. 233), a tall indigenous shrub. Those who expect the flowers to be strongly perfumed will be disappointed, for this plant differs from other Jasmains in having little scent.

As I reached the Chapel on the top the sun was about to sink behind the Esterel and bathed the dark blue summits in gold and purple. Soon the path of the vanished orb could be traced only by the long streamers of light which radiated from the spot. I was depressed rather than delighted by the grandeur of the spectacle, for to me it meant farewell. I turned my eyes to the giant mountains whose phantom outlines towered against the eastern sky. They were coloured by the sunset glow. It was a sublime spectacle in which one loses oneself, carried away by that immeasurable longing which unites us with the All. Personality was absorbed in the powerful sentiment of union with the Divine in Nature. Farther the shadows spread and farther on the land: they climbed the hills,

they scaled the heights: they pierced the depths of the valleys, enveloping in darkness both palace and cottage. All Nature sank to sleep. Soon the only lights were those which touched the rose-red summits of the snowy Alps and the solitary sails upon the sea. Then a dark shade sank upon the deep, and it was granted only to those giants there aloft to behold the Lord of Light. Burning as it were, with inward fire, they floated in a glory which is not of this world.

I closed my eyes and turned away wishing to retain this scene in my mind as a last impression of the Riviera. When I at length looked up the dark veil of night had fallen even on the summits and all outlines were blurred and fantastic. High above me the lighthouse flashed like a meteor far over land and sea, a beacon for the longing gaze of those who have once visited this sublime spot.



SECOND JOURNEY.

CHAPTER I.

The early Spring of 1894, which I spent on the Riviera, is impressed on my memory as one of particularly brilliant colouring. For weeks the sky was cloudless and shed its golden light upon the earth. The Mistral, that icy wind which comes down from the snowy slopes of the Alps and the Cevennes, rarely blew as there was but little snow on the mountains. The sea was calm, and at night when the stars twinkled they were as brilliantly reflected in the still waters as though a second harvest of them had sprung up in the deep.

We arrived at Hyères in the middle of March, intending soon to make our way westward to the Montagnes des Maures. We felt as though we were starting on a voyage of discovery, so little is the western end of the Riviera known. And yet Hyères could, next to Montpellier and Aix-en-Provence, once pride herself on being

the most famous health resort in the South of France. In those days it seemed hardly possible to penetrate further east on the Riviera; and not until fifty years ago, when circumstances changed, did first Nice and then Mentone and Cannes begin to flourish as health resorts. In the competition which now arose Hyères was bound to succumb, for she is not so well sheltered against the north wind and the Mistral as are her rivals. She is inferior to them also in beauty of situation and is too far from the sea. "The hills here are too low and too near, the coast too level and the sea too far off" — exclaimed Georges Sand when she visited Hyères. From the hill on which the town lies the sea can only be seen across a broad tract of low land. On this, angular reddish-brown fields, unrelieved by yellows or greens, stand out in glaring contrast. These fields are Rose plantations; but even our predilection for this flower does not blind us to the want of harmony in the colouring of the landscape. The tints of these Rose plantations at this time of year are not due to the splendour of the blossoms, but to the young shoots which are very red. The red colouring matter absorbs the greatest number of warm rays; this is an advantage in spring when evaporation is increased and the circulation of the sap, which is necessary to the healthy development of the plant, is promoted.

In earlier days the outlook over the plains of Hyères must have been pleasanter: at least Horace Benedict de Saussure was greatly charmed when he saw it in 1787. This eminent Geologist, father of the more famous Physio-

logical botanist Theodore de Saussure, arrived here on a lovely April evening and was spell-bound by the beauty of the situation. From the windows of the "Auberge du Saint Esprit" he looked down on Orange groves which were in the full splendour of fruit and blossom, and enlivened by innumerable nightingales. The land fell away gradually to the sea, so he wrote, and the slope was adorned in the foreground by gardens, with Olive groves beyond and Poplars in the distance. Wooded heights formed a frame to this lovely picture.

Hyères is five kilometres from the shore on which formerly stood Olbia, whence Hyères had its origin. Founded by Massiliots and destroyed by Saracens, this town was rebuilt on the heights further from the sea, that it might not be so directly exposed to the attacks of the Corsairs. The site of ancient Olbia is now divided, like a chess-board, into squares. These are flooded with sea water, which is left to evaporate in the hot summer sun for the sake of the salt which is deposited. Opposite are the Islands of Hyères stretched out as though sleeping peacefully in the sea. The Ligurians once obtained from these islands the red coral with which they adorned the necks of their women and the belts of their swords. And because of the *Lavandula Stoechas* (Fig. p. 257), which grew here in great abundance, these islands were in ancient times called "Stoechades". The perfume of this species of Lavender was formerly much prized. The plant owes its name to the arrangement of its flowers in vertical ranks. In the Middle Ages the Stoechades changed their name for the high-sounding one of the "Golden Isles". Was it the Golden

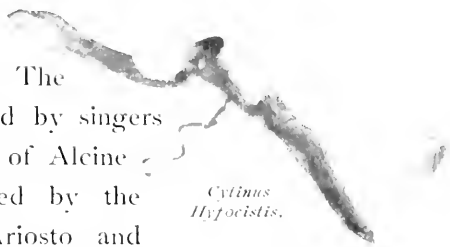
Apples of the Hesperides or the golden gleam of its shimmering soil which procured for these islands the name of "Iles d'or"? No one can decide that now. When Francis I created the Marquisate of the "Iles d'or", these islands saw brilliant times. Now they are inhabited only by poor fishermen and market gardeners. Those fruits from which the Golden Isles seek to derive their name have now almost vanished from the neighbourhood. But at one time the Orange groves of Ilyères had a great reputation. More than 200,000 Orange trees covered the district and were well calculated to awaken the wonder of travellers.

Chroniclers relate how Charles IX of France, standing in astonishment before the largest Orange tree, requested his two companions, the King of Navarre and the Duke of Anjou, to help him to span round the tree. But the six princely arms, we are told, failed to stretch so far! In remembrance of this illustrious embrace "*Caroli regis amplexu glorior*" was cut into the bark; and the inscription grew and increased with the years. Who now can tell whether this story rests on any basis of fact! — However it is certain that the Chroniclers were led by their lively Provençal imagination to over estimate the thickness of the trunk. The finest Orange trees now known in Europe are in Sardinia. Some of these are thought to be more than seven hundred years old. Yet only at this great age do their trunks measure more than a single man can span round with his arms. When Charles IX visited Ilyères in 1564 he could not have found so thick a stem, since the Orange trees were first

brought there by the Crusaders towards the end of the eleventh century. Moreover it must have been the bitter-fruited Orange tree which flourished there, the one with almost uneatable fruits, but which yields a very sweet essence. For the poet Malherbe provided himself in Hyères with that "huile de fleurs d'Oranger, which women rub into their hair to retain the powder". The Orange trees of Hyères suffered greatly during the severe winter of 1709, and in other severe winters which succeeded one another in the middle of that century. The plantations were reduced and the bitter-fruited trees replaced by the sweet ones, for oranges could be more quickly transported to the North from Hyères than from places further south. This was no doubt the result of the then defective means of communication. The oranges were gathered in the autumn at Hyères, as soon as the first yellow spots showed on the green skin, and, carefully wrapped in paper, they were dispatched on their land or sea journey. They ripened gradually on the way and became edible in about forty days. Orange trees have now almost completely disappeared from Hyères, which could not hold out against the competition of the more sheltered places on the Riviera, and especially of those more distant countries which our present means of communication have brought so near. The Orange trees of Hyères fared no better than did formerly its Sugar Canes, which in the fifteenth century covered wide stretches of land, but which vanished when the Indian and Brazilian sugar appeared on the market.

With justifiable pride, however, Hyères can still call herself "Hyères les Palmiers". It is true that Palm trees are now distributed over the whole Riviera; but it is easy to tell by the size of the trees at Hyères that in this old health resort their careful culture is of long standing. In the Avenue des Palmiers the slender stems rise like the pillars of a lofty hall on both sides of the street, and wave their proud heads high up against the blue sky. Hyères has for some time past been turning its attention to a more profitable, if humbler, industry. We found whole fields of Violets in blossom in the middle of March; they were not the same modest little flowers which hide themselves under their leaves at home, but a far larger species — "le Czar" — which boldly raises its blossoms on long stalks above the leaves. They are strongly scented and we revelled in the perfume which the breezes wafted to us from these Violet fields. Other tracts are planted with "primeurs". In the beginning of the century the artichokes of Hyères were already held in high esteem, as are now the green peas and especially the strawberries, which are sent to Paris. A special train runs daily from Hyères laden with these products, and is jocularly called "train de primeurs". It should not be imagined, however, that all these crops succeed in the climate of Hyères without attention. Even here they require much care and unremitting industry. Low hedges run parallel to the furrows of the fields, and this clearly indicates the direction whence danger threatens. For, in spite of all assertions to the contrary, Hyères is not fully sheltered

from the Mistral, which with unabated fury rushes unchecked through the gap in the mountains near Toulon. Continuous drought is also a serious drawback and cannot always be remedied by irrigation. Nevertheless there is a considerable difference of climate between Hyères and the rest of Provence and even Toulon which lies so close at hand; for these are much more exposed to the Mistral. In former times the traveller coming from the west and seeing for the first time Palms, and Orange trees laden with their golden fruit, imagined himself transported to the gates of Paradise. Old books of travel are full of praises of Hyères. As for instance that of Aubin-Louis Millin, "Conservateur des médailles, des pierres gravées et des antiques de la Bibliothèque impériale", who in 1804 travelled in the South of France commissioned by the Minister Chastal. "I today visited the garden of Monsieur Fille (writes Millin). Thousands of flowers surround his house. Tuberoses (*Poly-anthes tuberosa*), Mimosa (*M. Farnesiana*), and Jasmine (*J. Sambac*) perfume the air with their divine fragrance. The gardens once praised by singers and poets — those of Alcine and Armide, created by the fertile genius of Ariosto and Tasso — however vividly pictured in our



*Cylindrus
Hypocistis.*

imagination, pale before the garden which we see here with our own eyes. We seem no longer to be walking upon earth, but rather to be transported to those groves in which the souls of the righteous enjoy everlasting bliss. The trees stand so close to one another that it is only possible to pass through them by artfully planned paths. Eighteen thousand Orange trees, laden with flowers and fruit, shelter in their branches innumerable nightingales and their songs rise like a hymn to Nature — a hymn of thanks for such a delightful and fragrant shelter. Other birds join their voices to this brilliant concert, while busy bees swarm humming round the flowers gathering the rich food so profusely lavished”.

Similar sentiments of sensuous delight aroused by the genial climate may have induced the Massiliots to call their settlement on this coast “Olbia” — the blessed.

We loved to roam on sunny afternoons on the Maurettes, those heights which flank the town of Hyères. We would seek out the spots whence the ancient Castle of Hyères shows in the fairest setting. Blue sea in the distance, green hills and checkered plain. Resting amid Rosemary, Myrtle and Lavender we would forget the fleeting hours and attempt to repeople those ruins which crown the rocks yonder so majestically. These ruins are still guarded by watch-towers and walls, which follow all the inequalities of the mountain in their deeply indented outline.

From the twelfth century the “Chastel d’Yères” was held by the Lords de Foz, a collateral branch of the Viscounts of Marseilles. Many a fierce struggle they

had to retain the fortress, and often from the watch-towers their matchlocks flashed against the foe. In peaceful times the songs of the Troubadours resounded in the Castle, accompanied by the strains of the six-stringed Viola. Mabelle de Foz was president of the Court of Love of Pierrefeu, which with Romani, Avignon and Signe formed the four most distinguished "cours d'amour" of Provence. In June 1254 there was a royal visit to the Castle. Saint Louis, recalled from Palestine by the death of his mother, came hither on his way back to France. A few centuries later Francis I was entertained here, while Louis XIII saw only the ruins of the fastness, for Henry IV had decided upon its destruction. Now the walls are clothed with luxuriant verdure, and spring flowers of many colours deck the summits of the towers. The dark hill is sharply outlined against the bright evening sky when the Provençal sun sinks to rest behind the ruins. Then it floods with its light land and sea, gilds the dark rocks and forms a golden halo round the ancient pile. But the ruins had a still more profound and mysterious attraction for us after nightfall when the moon had enticed us abroad onto the hills again. Her silvery rays penetrated deep into the clefts and crannies of the battered masonry and cast uncanny shadows among the ruins. Now the old walls and turrets assume human shape, appear to move their limbs and to gaze into the distance. Suddenly all is once more lifeless, for a cloud has cast its dark shadow on the hill. But when the moon came forth again it seemed to us as though the turrets had joined

hands and were whirling round the ruins in an infernal dance. Up hill and down dale and over the steep rocks they went, while the wind groaned and shrieked a wild, threatening accompaniment. For a few seconds the fastness was as brilliantly illuminated as though it were on fire — then once more all vanished in the darkness of the night. With whirling gusts and thunder and lightning a storm was rising from the west, and may perhaps have conjured up before us these fantastic visions. Rapidly darkness spread over the landscape and only the distant sea was still bathed in silvery light. A dazzling flash shot through the air, followed by a deafening peal of thunder which seemed to shake the earth to its foundations. We stood dazed, while the thunder rolled further off. It still resounded hollow in the nearest heights, reverberating from the rocks with ever lessening echo, approaching again, and at last dying away in the distance. Did this brilliant flash of lightning strike the Castle, or blast those slender Cypresses which point so proudly heavenward from the ruins, as though in defiance? Heavy rain-drops began to fall it was time to return.

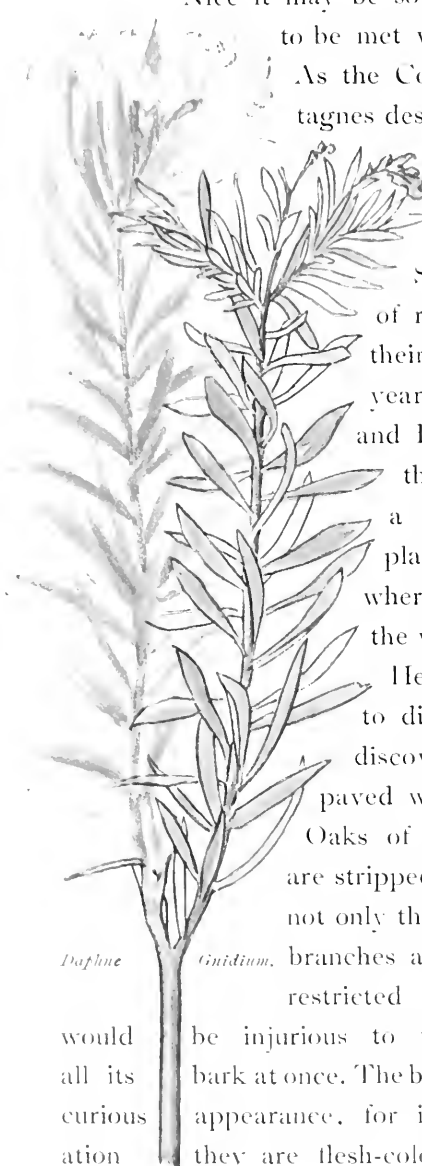
CHAPTER II.

The range of mountains which rises to the east of Hyères was a stronghold of the Moors in the ninth and tenth centuries: and it appropriately bears their name. From these mountain fastnesses they terrorised the coast far and wide. The *Montagnes des Maures* are highly interesting from a geological point of view. They present

an instance of an isolated mountain system whose granite, gneiss and schists are completely cut off from the neighbouring limestone mountains by deep valleys. Like the Alps or the Pyrenees, the Montagnes des Maures possess, although on a small scale, their own river system, their own ravines and valleys. This district differs as widely from the rest of Provence as though it were an island lying at some distance out at sea. A railway, (Chemin de fer du Sud de la France), has recently been run along the coast at the foot of this range. The line ends at St. Raphaël, where it meets the main line between Marseilles and Genoa. These hills can be easily explored from the stations of the Sud de la France line: and it was these excursions which detained us in Hyères. We never wearied of the journey along the coast, for the scenery is charming, with constant alternations of forest and sea-scape. The mountains themselves, however, present little variety, for their summits are rounded and do not exceed 1320 feet in height. Yet the luxuriant woods which clothe them tempt one to explore them further. The forests of Cork Oaks will at once strike those who have never seen them before. The Evergreen Oak is familiar, but the stripped trunks and branches of the Cork Oak present an unusual appearance. The crown of the Cork Oak resembles the Evergreen Oak and its leaves are also coriaceous. They are only to be distinguished from the leaves of the latter by their ovate form and slightly serrated edges. But the red-brown colour of the stripped parts, which appear almost blood-red in the sunshine, is very striking.

The population of the Montagnes des Maures lives chiefly by the cork industry. Though the cork obtained in the district is inferior to that of Spain and Algiers, it is still a valued article of commerce and forms a profitable source of income. Before the Cork Oak can be stripped it must have attained a certain size. This may take from fifteen to twenty years. The first cork is full of cracks and brittle and is used principally in tanning. Because it is rough and hard it is called "male cork". After this the smoother, softer and more useful cork is produced. This is called "female cork". The trees are stripped at periods varying from eight to sixteen years, according to the thickness required in the sheets of cork. For ordinary bottle-corks eight-year-old sheets are thick enough, but for "noble" Champagne corks much stronger and thicker sheets are necessary — about five centimetres thick. The tree is repeatedly stripped until it is a hundred and fifty, or even two hundred years old. Then the quality of its bark deteriorates and the tree is replaced by a younger plant. These ancient Oaks are very majestic, and their mighty crowns and gnarled trunks are conspicuous among their surroundings. With pleasure does the eye rest upon them when, as is frequently the case, they are picturesquely grouped round isolated bosses of rock on the hillside. The Cork Oak prefers a soil composed of weathered granite and shale, and avoids limestone. So that the Montagnes des Maures are as much isolated from the rest of Provence in point of vegetation as they are geographically. On the limestone of the neighbouring Alps the Cork Oak is not to be found. At Mentone and

Nice it may be sought for in vain and is only to be met with occasionally at Cannes. As the Cork Oak woods of the Montagnes des Maures betray the primitive rock of the range, so other plants indicate the limestone of the adjacent Alps. Sometimes solitary patches of rock may be recognised by their vegetation. Thus a few years ago the Inspector of Woods and Forests at Saint-Venant, in the forest of Orléans, noticed a narrow strip of calcareous plants about half a mile long, whereas the remaining flora of the wood indicated silicious soil. He was led by this observation to dig, and at no great depth he discovered an old Roman road paved with limestone. — The Cork Oaks of the Montagnes des Maures are stripped during the summer, when not only the trunk but also the thicker branches are peeled: but this is always restricted to certain parts, for it would be injurious to the tree to deprive it of all its bark at once. The bared portions present the most curious appearance, for immediately after the operation they are flesh-coloured but gradually become

*Daphne**Gnidium.*

darker. The workman commences the stripping, which is called "démâclage", by making two circular incisions round the tree through the whole depth of the cork layer and then connects these rings by longitudinal slits, the number of which varies according to the size of the tree. This operation is accomplished by an axe, which has a sharpened, wedge-shaped handle. He inserts this under the bark through the cuts and raises it. Then the sheets of cork are weighted with stones so that they may lose their curve, and are held over fire and their surface a little charred. It is essential that the sheets of cork be dry before they are exported.

Cork is the natural protection of plants. The older bark of almost all our bushes and trees is covered with cork and owes its colouring to it. Gases and liquids cannot penetrate cork which is elastic and has great powers of resistance. These qualities are not only of service to the living plant but determine its practical utility. If a plant is injured suberous tissue forms over the wound and encloses it: hence the new growth of cork on a stripped Oak. Like any other tissue cork consists of cells. Indeed it was in a piece of cork that Robert Hooke discovered, in 1667, those chambers which he called "cells" because they appeared to him to correspond to the cells of a honeycomb. The cells of mature cork contain no living protoplasm, that substance which constitutes the life of a cell. Cork cells dispense with this, soon after they are formed, in order that their corky covering may serve the plant as a protection. A special layer of living tissue inside the bark — the so-called cork cambium —

forms the cork by means of continuous multiplication of its cells. The younger layers of cork cells are produced inside the older ones. In the Cork Oak these cells are approximately cube-shaped, but towards the end of each period of vegetation they flatten out and become tabular. The "female cork" of the Cork Oak is distinguished by the thinness of its cell-walls, and by great uniformity in their shape. Only at the conclusion of each period of vegetation are a few layers of more strongly thickened and flattened cells produced. It is these latter which form the dark stripes which are to be seen in every bottle-cork. As the darker layers indicate the limit of the annual growth, the age of each sheet of cork can be estimated just as the age of wood can be determined by the number of annual rings on it.

If a Cork Oak is stripped a new cork cambium forms under the exposed surface, and begins a new cork layer. The cork only and not the bast, should be removed; much less should the wood be reached, for deep wounds take time to heal and retard the formation of cork at the injured spots. Should a branch never have been stripped, it presents, like other species of Oak, a cracked bark the outer layers of which are gradually thrown off. Even in cases where the tree has been stripped the cork should not exceed a certain age, otherwise it becomes furrowed on the outside and useless.

Besides the Cork Oaks, Spanish Chestnuts are also cultivated in the Montagnes des Maures. There they cover altogether an area of more than four thousand

hectares and yield those particularly fine chestnuts which are exported as "Marrons de Lyons".

In the western portion of the Montagnes des Maures there is no lovelier spot than Bormes. This can be reached by train from Hyères in an hour. There we ascend from the shore to the hill on which the little village stands like an amphitheatre. The houses are scattered at different heights: here singly there in groups, as though attempting to climb the mountain. The place is dominated by an old Castle whose grey ruins show clearly against the dark green background of the woods. The slope is overgrown with aromatic herbs, and each step liberates their sweet-scented oils. Whole tracts are violet with that Lavender (*Lavandula Stocchas*, Fig. p. 257) which at one time gave its name to the Islands of Hyères. [This plant is still found in such abundance here that a neighbouring village is named from it — "Lavandou". We ascend farther into the wood among Cork Oaks, Pines and evergreen bushes. Here, too, everything is now in bloom. The air is laden with perfume, and from the Pines, if touched, thick clouds of pollen rise. The outlook over the dusky ruins, the bright village and the blue sea, into which a tongue of land stretches far away, increases in grandeur. Eastward we gaze down into the roadstead of Bormes, and westward is seen that of Hyères; and beyond a narrow promontory the Golfe de Giens is just visible. The colouring of each of these bays is different. The eastern bay gleams with a soft blue light; the roadstead of Hyères is like liquid silver; while the Golfe de Giens

reflects the fiery glow of the evening sky. We satiate ourselves with this feast of colour and then let our eyes rest on the dark green of the distant woods. Gradually a purple sheen spreads over the sea, and now under the rays of the evening sun the Iles d'or of Hyères shine as though they were really gold.

Large quantities of cork are piled up in front of the houses at Bormes. We entered a house in which cork was being cut and watched the work. The man, who received us politely, was making bottle-corks with the help of a lathe. He fastened angular pieces of cork into the spindle, set it revolving, and cut the cork with a tool resembling a plane. Great practice is required to insert the pieces of cork securely and quickly into the lathe, and to centre them correctly. If the worker be skilled he can make hundreds of corks in the hour, whereas cutting freehand he could scarcely bring the number up to a thousand in the day. The sheets of cork have to be scalded in water before they are sliced into angular strips. They swell considerably under this treatment. The longer axis of the bottle corks coincides with the length of the sheets: the corks must be imagined as standing upright in the bark of the tree.

The scraps which fall from the lathe are by no means useless. They may be used in upholstery or, when well charred, may be made into a black colouring matter called "nigrum hispanicum", or into tooth powder. Pulverized cork, mixed with thickened linseed oil and spread on water-proof sail-cloth, makes the cork-carpet known as linoleum with which floors are covered.

The universal use of cork as stoppers for bottles does not date further back than the seventeenth century. It coincides with the spread of our narrow necked glass bottles which were manufactured not earlier than the fifteenth century. In the Middle Ages small vessels were made of wood, earthenware or metal and closed with stoppers of the same material, or only sealed with wax. The casks were bunged with wooden plugs. The ancients used wooden as well as cork stoppers for their amphorae, and smeared them with a cement made of resin, chalk and oil, or of pitch. More commonly the openings of these casks were only daubed over with gypsum, resin, pitch or wax. Oil was poured on the wine, as is still done in Italy today, to prevent the access of the air. According to Pliny pieces of cork were used even by the Romans as floats for fishing nets and as buoys for anchors; and the soles of ladies' shoes were also made of it.

CHAPTER III.

The Gulf of St. Tropez, the Sinus Sambracitanus of the ancients, cuts deeply into the Montagnes des Maures. From a distance the houses of St. Tropez on its shore gleam gaily and the bay looks like an inland sea. Its azure waters are as smooth and clear as a dark sapphire. We look across it to the Montagnes des Maures whose wooded heights stand out sharply from the clear heavens. Eastwards, in the misty distance, the jagged summits of the Esterel close the view, and above them, high in the clouds, float the snowy Alps.

Here, by this blue bay, once stood *Heraclea Cacabaria*. It is said that a temple of *Hercules* gave its name to the town. The district was inhabited by the *Camatullici*. According to legend the body of *St. Tropez* was stranded at this town in 66 A. D. Under *Nero* the Saint had occupied high positions. His cousin, *Salvius Otho*, was proclaimed Emperor in 66 A. D. He himself laid aside all his dignities after the apostle *Paul* had converted him to Christianity, and returned to *Pisa*. Here one day *Nero* decreed that *Diana* and *Apollo* were to be worshipped with great theatrical pomp under a brazen canopy. *St. Tropez* refused to do so. He was seized, and at *Nero's* command tortured and beheaded. His body was cast adrift in an unseaworthy boat. A dog and a cock were placed in the boat in order to feed on the corpse. But neither the dog nor the cock touched the Saint's body: instead they guarded it. An angel alighted on the helm, and steered the vessel safe through the waters to *Heraclea*. There the

Christians, called together by the crowing of the cock, assembled on the shore and received the

body of the Saint with great

honour. — In the

ninth century old

Heraclea was destroyed by the *Saracens* and only ancient walls and tombs still show where it stood. The



*Dicentra,
Hyf-glossum.*

present St. Tropez does not date back further than the fifteenth century. It owes its prosperity to Genoese families who settled here. Numerous watch towers round the town and works of defence on the heights show that the place had frequently to resist pirates and other foes. Today it is protected only by coast-guards who keep watch upon the hills. Thus do times change. Formerly this town had to repel Corsairs, anxious to pillage it; today it protects itself against smugglers who are only too eager to provide for it.

St. Tropez has become a centre of the cork industry; and a great many ships are here laden with cork which comes in from all parts of the *Montagnes des Maures*.

St. Tropez could hardly become a health resort, for it is too much exposed to the winds. The harbour is sheltered from the open sea by a projecting headland; yet the Mistral and the east wind drive the waves of the gulf into it. The curious construction of many of the houses shows that in high seas the water dashes right up to the breakwater on the shore. These houses have no windows below, only small, tightly closing doors, like the base of a lighthouse which has to defy the sea. With the exception of the abovementioned winds this sea-girt range enjoys a very mild climate; so much so that the well known geologist, Elie de Baumont, has described this spot as the *Provence of Provence*. The vegetation is luxuriant: Pines and evergreen Oaks clothe the heights and mighty Chestnuts cast their shade upon the slopes. Here and there a Palm stretches its slender

crown above a wall; but it bears signs of having been lashed by the winds. Oleander shrubs and Vitex bushes line the banks of the streams. With the lovely blossoms of the Oleander Greek country women adorned, and still adorn themselves today. In Germany Oleander leaves are used to decorate dishes, although, as a matter of fact, the milky juice of this plant is very poisonous. It was said that the narrow leaflets of the *Vitex Agnus castus* (fig. p. 415) checked sensuality. Hence its specific name castus — chaste. Athenian women used to strew their couches with Vitex leaves at the time of the Thesmophoria, that mysterious festival in honour of the goddess Demeter, from which all men were excluded. Vestal virgins carried twigs of Vitex in their hands, and Hera is said to have been born under a Vitex bush. The German name of this plant, "Monks' Pepper", also has reference to the virtues which were ascribed to its spicy berries in the monasteries. *Vitex Agnus castus* appears now to have lost the powers attributed to it in earlier days: only its fruits are still used as pepper in some places. The Oleander has been applied to a much less romantic purpose, for the peasants in the neighbourhood of Nice use its powdered bark to drive off rats and mice.

In the Hôtel Continental at St. Tropez we live in the good old style. Excellent wine is supplied for the benefit of every one. Before helping ourselves we ask our neighbour if we may not pour some out for him, and the waiters would be greatly surprised if asked for a wine card. Salami, olives, sardines and other

things, which have become general in Europe, were served up there as entrées, also sea-urchins, a delicacy that I had not hitherto seen at an ordinary Table d'hôte. I willingly left this tid-bit for others. To me it proved that man is the most wanton of all predaceous animals. Thousands of female sea-urchins are caught, broken open and wasted. The whole body is thrown away and only the little bit of roe consumed. Thus countless multitudes are destroyed. I have no desire to acquire a taste for this orange-red, insipid, slimy stuff: but opinions differ. Our table companions were always thrown into raptures by "Bouillabaisse", a dish for which the Provençal longs whenever he is living in any other part of France. The hostess tried to ascertain by the expression on the faces of her guests whether they liked the Bouillabaisse, for the proper cooking of this dish is alone sufficient to establish the reputation of an Hôtel. As it was put before us this dish consisted of lobsters and fish. Our hostess made no secret of its preparation. She told us that she had first of all mixed together some garlic, laurel-leaves, white pepper and olive-oil and fried them in a casserole: then poured a glass of white wine over this and added the lobsters, fish and sufficient water to cover the whole; then more pepper and salt, and boiled for twenty minutes and lastly finished up with a pinch of saffron. The fish were served up in a deep tureen in their own broth with the addition of some white bread cut up. The Bouillabaisse found unanimous approval. The hostess maintained that it was only worth while to prepare it for French people.

as foreigners gulphed down well and ill cooked dishes with equanimity: and this was discouraging to a careful house-wife. Then my neighbour at the table explained, in a lengthy speech, that he could not see why one sense should be neglected more than another. One person might have a dull palate; another sightless eyes, or deaf ears. Men who were unable to distinguish between a carp and a turbot, inspired him with no higher respect than those who confused Van Dyck with Raphael or Gounod with Wagner!

Although the food was good the rest of the arrangements left something to be desired as regards comfort: so that in spite of the excellent cuisine we longed sometimes for other accommodation.

A tramway now runs between St. Tropez and La Foux, a station on the Sud de la France line. It passes the castle of Bertaud, and near its gates a mighty Pine whose trunk measures quite six yards in circumference. It may well be one of the largest Pine trees in existence, and many a Saracen has camped under its shade. The tree stands in the middle of the Route Nationale and it is much to their credit that the engineers spared it. The tramway continues beyond La Foux northwards to Cogolin, and thence one can reach the Chaussée La Garde Freinet. The Romans established a military post at this spot to guard the communication between the Sinus Sambracitanus and the Via Aureliana, which ran through the mountains a little further north. It is a narrow pass between two hills, in which the Moors also entrenched themselves in the year 850, after they had

destroyed St. Tropez. They thus commanded both the range and an approach to the sea. The fastness which they built was called "Fraxinetum", and this name was later on applied to all similar Moorish fortresses. Here they piled up their stolen treasures before shipping them across the sea to Africa. William I, Count of Arles, with the help of two Provençal noblemen, Bavon and Grimaldi, took the castle by storm in 973. All the Moors who escaped the sword were made slaves, together with the women and children. The fastness was razed and only the ruins of a few walls, now covered with Ivy, and a deep cistern cut out of the rock, indicate where it once stood.

As a reward for his bravery and in recompense for his services Grimaldi received from William I all the lands which the Moors had held near the Sinus Sarnbracitanus. The ruined castle of Grimaud still rises heavenwards on the mountain which commands the mouth of the valley. It is a relic of those days. Two towers on the steep slope, joined by crumbling walls, appear to hang over the precipice; the rest of the fortress is destroyed. But below it, although deprived of its protection, the little village of Grimaud still clings to the rocks, framed in luxuriant green.

Eastward from La Foux the Chemin de fer du Sud follows all the indentations of the coast. Now it hurries towards the sea, and St. Tropez on the opposite coast seems to come nearer and nearer: then it turns landwards again and hugs the Maures range. Soon Ste. Maxime is reached — the place to which Guy de Maupassant

was so partial. Beyond a tongue of land the Esterel suddenly appears again. The Montagnes des Maures come down close to the coast: the woods reach the sea.

More and more exuberantly beautiful do they become as we approach. The Tree Heath (Fig. p. 175) with its masses of white flowers shines forth from

among the Evergreen Oaks and Maritime Pines. Everywhere the *Arbutus*

(Fig. p. 37) spreads out its Laurel-like leaves. Dark Ivy climbs aloft on the

trunks, and luxuriant *Clematis* trails its bright festoons of leaves from tree to

tree. This lovely scene tempts us to break our journey here: we alight at

La Gaillarde and set out on foot. We follow the shore. The Maritime Pine

almost dips its roots into the waves: often it bends over the water as though to

look at its reflected image in the glittering surface. The sea is bordered

with silvery foam and the land with its evergreen fringe. Rugged rocks crop out

on the beach and jut forth far into the deep. The Esterel is quite close to us. It

shows the same richly varied outline which we admired so from Antibes. This range

of mountains is so limited in area that the same heights give character to the

outline from the east and from the west.



*Erica
arborea.*

From Antibes when we see the sun sink behind the Esterel, its summits are veiled in dark blue shadows and its outline shows in bold relief against the evening sky. But here it is bathed in light; the setting sun casts its rays into the valleys making each hill to stand out; gilds the peaks; draws forth blue half-shadows from the depths; illuminates whole villages; throws unaccountable lights into the isolated houses, and finally tinges everything with a purple glow. Carolus Duran settled at St. Aigulf on this coast, and the place is well calculated to charm an artist's soul with the splendour of its colouring. Suddenly the broad valley, which the river Argens flows through in innumerable windings, opens out before us. This valley separates the Montagnes des Maures from the Esterel. The pond of Villepey and the meandering river gleam like metal mirrors. In Fréjus the evening bells are ringing, and from the opposite shore of the Golfe the lighthouse of St. Raphaël flashes forth dimmed by the light of the declining day.

CHAPTER IV.

We are now on classic soil; for Fréjus is the old Forum Julii, so named after Julius Caesar. Augustus completed the harbour, which was constructed among the lagunes, and provided the place with a lighthouse. Agrippa built an aqueduct and an amphitheatre. Soldiers of the eighth Legion settled here, and this led to the later name of Colonia Octavianorum. The town grew rapidly in size and importance; it measured five thousand paces in circumference. The harbour was so extensive

that in the year 31 B. C. it was able to contain the two hundred galleys which Octavianus captured from Antonius in the battle of Actium. What a splendid sight that must have been when the fleet of Antonius filled this harbour, when powerful Roman galleys were mirrored in its waters, and far away up the valley the bold arches of the aqueduct extended to the distant hills. Under the Emperors Fréjus remained the most important naval base on that coast: then sad times commenced for this place. The *annis argenteus* — the Argens of today — slowly silted up the harbour with mud and earth. In the tenth century only small vessels could take refuge here. And in the year 940 the Saracens came and destroyed the fortifications of the town. In the fifteenth century Fréjus was burned by Corsairs, and plundered under Charles V in the sixteenth century. The harbour gradually disappeared and extensive swamps formed in its place; these filled the neighbourhood with deadly miasma. At the commencement of the eighteenth century Aubin-Louis Millin describes the place as a picture of misery. The streets were empty, the houses uninhabited, and the few people who were to be seen had pale, white faces, hollow cheeks and sunken eyes. You might fancy yourself in a large hospital. Millin writes: -- "We took rooms in the best Inn; it was an uncleanly and pestilential house, in which our sojourn was a penance. The rooms were extremely dirty. Foul water was given us in unwashed jugs; swarms of flies besieged the food, which was prepared with rancid oil. The midges and gnats which came from the swamps plagued us with

their bites: and at night we were devoured by equally importunate but more loathsome insects. We were irritated to fever pitch. Only those who were accustomed to these pests could live here: to us they seemed the greatest evil that human beings could have to endure. We lamented that the thirst for knowledge, which prompted us to visit famous historical towns, had led us to this wretched place, and we wished to leave it as soon as possible". Since then the condition of Fréjus has improved. Canals have been made to drain the neighbourhood and thus make it more healthy. The town itself has shrunk to barely a fifth of its earlier size, but looks tolerably pleasant. Anyone expecting to be deeply impressed by remains of classic times will be disappointed. Very little is left: too little to inspire veneration or to be artistically effective. Only the broken arches of the aqueduct out in the fields, overgrown with climbing plants, are beautiful here and there. The river Argens has worked so industriously in bringing down fresh deposits that today Fréjus is separated from the sea by a broad stretch of sand, and the ruins of the old Roman lighthouse rise from the ground one-and-a-half kilometres from the shore. Thus the ancient glory of Fréjus has departed for ever, and what remains of it can in no way be compared with the monuments of Nîmes and Arles. But the elevating sentiments inspired by classic soil possess us even here. We gaze out over the blue Mediterranean on whose shores grew and throve that mighty civilisation under the dominion of which the entire world bowed down, and we reflect that we are still ruled today by those

thoughts and feelings, common to humanity, which found expression and took shape in those times.

Roman villas covered the shore on which the town of St. Raphaël now stands. The Roman Patricians particularly favoured this beautiful district. This was their *Provincia Romana* par excellence, the one to which they referred whenever they spoke briefly of "Provincia", and it has retained the name of Provence. Knights Templars settled on the shores of St. Raphaël after the Romans, and built that square tower which still seems to mount guard over the old church. In 1799 Buonapart landed at this spot on his return from Egypt: and it was here also that he left the country in 1814 to embark for Elba.

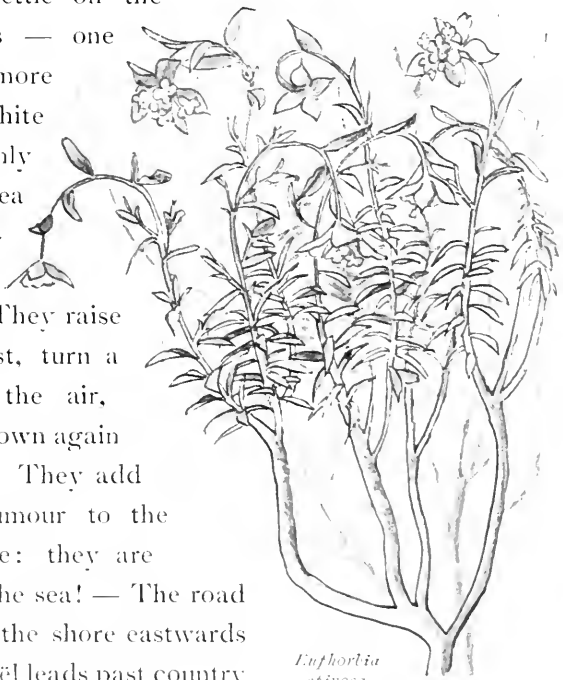
Curious types are met with among the native populace. This is not surprising since the inhabitants of the upper town are undoubtedly Saracen, and those of the lower chiefly of Genoese origin, and they still hold aloof from each other.

The statement that Alphonse Karr discovered St. Raphaël is not strictly accurate as its long historic past proves, but the fresh impulse which this place received was due to him. He himself settled here and praised the beauties of the situation so highly, both in speech and writing, that other authors and artists soon followed his example. What they sought and found here was a quiet, secluded spot, where one could enjoy flowers, sunshine and sea without being molested by one's fellow men. They all fled from the overgrown town of Nice and the formality of Cannes. "If I cared to live in a large town",

Alphonse Karr used to say, "I would return to Paris". It is cooler here too in the summer than east of the Esterel, and the sandy beach is pleasant for bathing; for this reason St. Raphaël is becoming more and more of a summer bathing resort. In the winter it suffers too severely from the winds, as we had yet to discover. On the evening of our arrival the east wind set in; next day it blew strongly and was accompanied by heavy rain. In such weather as this nothing could be done out of doors, for the wind blew the rain almost horizontally through the air. This lasted two whole days, which seemed intolerably long.

Strong east wind is generally accompanied by rain here and is therefore very dreary. It is very different when the northerly Mistral sets in as it is dry and consequently more cheerful. This wind sweeps the heavens clear: it blows in gusts, now whistling merrily in the sunshine, now sounding like thunder and rattling about the buildings. The east wind, on the contrary, is steadier, and as it rises and falls its voice is more like a lament, so that at night one seems to hear long-drawn sighs. The second night after our arrival a noisy thunderstorm broke, filling the valleys with dull roars and throwing short, quick flashes over the sea. But when morning dawned the sun streamed brightly into our rooms. The sea was raging and we went out to watch it dashing against the rocks of the coast. Two red porphyry rocks — known as the Two Lions, "Le lion de terre" and "Le lion de mer" — are landmarks of St. Raphaël, and both mount guard over its shores. The "Sea Lion"

has ventured a short way into the sea; the "Land Lion" is stationed on the beach. There they stand like apocalyptic animals, and have resisted from time immemorial the erosive action of the waves. The sea was now dashing against these rocks with fury, rolling its waves over them with deafening din and throwing up foam and spray. High above in the blue sky countless sea-gulls were soaring. It is a pleasure to watch these brave birds cleaving the air with the long sweep of their powerful wings. They sail against the wind, or hover in one place and shoot downward to the sea to seize their prey. Then they vanish with it into the distance, or settle on the heaving waves — one white spot more amongst the white crests. Suddenly away out at sea a shoal of dolphins leaps out of the water. They raise their heads first, turn a somersault in the air, and then dive down again into the deep. They add a touch of humour to the grand spectacle: they are the clowns of the sea! — The road which follows the shore eastwards from St. Raphaël leads past country



Euphorbia spinosa.

houses which bear many well-known names on their gates. Here we see "Maison Close", that house so shut in which Alphonse Karr built for himself in order to live secluded. Charles Gounod sought retirement in "Oustalet dou Capelan", and an inscription records that: — "L'illustre maître, Charles Gounod, composa Roméo et Juliette à l'Oustalet dou Capelan, au printemps de 1866." Jules Barbier, his librettist, who lived near by, added to it: "Hic divum Romeo scripsit Gounod meus 1866. Ingenio haud amicitia impar". Gounod was fond of staying at St. Raphaël; "I have lighted upon the Bay of Naples here, (so he used often to say) with the Campagna of Rome in the background".

Is the position of St. Raphaël really as beautiful as Gounod maintains? I cannot say so, although I will not deny to this place a peculiar charm of its own. I myself miss at St. Raphaël the full view of the Esterel range: nor do I feel sufficiently recompensed for this want by the uniform outline of the Montagnes des Maures, or by the broad valley of the Argens which Gounod compared to the Campagna of Rome. I would rather follow the example of Carolus Duran and settle on the other side of the valley, at St. Aigulf by the wooded shore, whence at eventide the jagged Esterel may be seen aglow with purple.

CHAPTER V.

St. Raphaël forms an excellent starting point for excursions into the Esterel range: and truly these mountains are worthy of a visit; they are among the gems

of the Riviera. The Esterel owes its picturesque charm to the porphyry which crops up in bare, rocky masses. Round these porphyritic and other igneous rocks there is shale. The Esterel range is isolated from the Alps, and by the valley of the Argens also from the Montagnes des Maures. As late as the beginning of last century it was hardly safe to venture into the Esterel: now one may roam about there in greater safety than in the outskirts of many large towns. Our first visit was to the highest point in the range, the Mt. Vinaigre, whose summit rises 2,000 feet above sea level. We hoped from this height to overlook the whole Esterel range and intended to form our plans there for further excursions. We left St. Raphaël as morning dawned. The road led northwards and shortly reached Valescure. There, in the cool woods on the slopes, Roman families used to spend the summer when the heat of the day in Forum Julii became intolerable. "Vallis curans", that vale which brings health, must, as its name implies, have enjoyed the reputation of a particularly salubrious resort. This old repute might still be taken advantage of today and new inhabitants be attracted hither by a name so full of promise. In Valescure we have roads ready laid out, "Grand Boulevards" with high-sounding names: woods changed into parks: large Hôtels awaiting guests: music pavilions ready for musicians. Still visitors do not appear. And where are the millionaires to come from who are to cover the whole Riviera from Toulon to Ventimiglia with Villas for the advantage and profit of all those speculators in land? Directly the construction of the Sud de la France railway

was decided upon, joint stock companies bought up every spot on the shore commanding beautiful views, and all points on the heights which were remarkable either for their healthy position, odour of Pines, or any other advantage. In St. Aigulf too, across there in the *Montagnes des Maures*, the woods are already divided into lots and intersected by "Grand Boulevards", and not only embellished with fine names but also provided with lamps. It is true that the lamps are not glazed and that not one of them has ever been lighted; some of them have been knocked over by storms and some by human hands, and now lie rusting, a sad picture of decay where life has never been. Among them the largest and most striking notice boards stand forth bearing coloured inscriptions and plans with information about the sale of land plots.

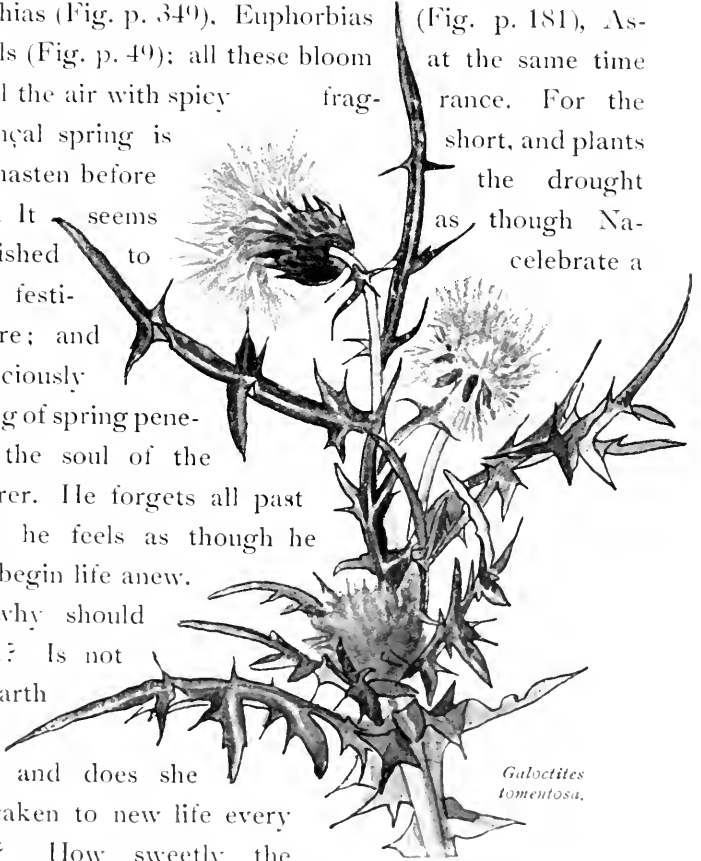
Will Valescure ever prosper? It is quite likely: it already shows signs of animation. "*La nature sévère et riante, l'odeur des pins agréable et salubre*", (thus Stéphen Liegeard extols the place), have enticed the artist, Suzanne Reichemberg of the "Comédie Française", and the no less renowned singer of the Parisian "Opéra Comique", Miolan Carvalho, to settle here. The place is pleasant, surrounded as it is by evergreen woods, with a cheerful outlook upon the sea and over the mountains. We breathed more freely when we had left these "Grand Boulevards" behind and were passing through a part of the country less disfigured by speculators. The sun rose in a blue-grey mist like a red, rayless orb; then it came forth from the mist and shone brightly in the cloudless sky, and the earth seemed to be flooded with light.

Soon we were walking in those extensive woods which cover nearly the whole Esterel range. They were formerly much damaged by fires and the pedestrian met with charred skeletons of trees instead of green, leafy crowns. Now the woods have become State property and thrive under the most careful attention. The dark Maritime Pines (*P. Pinaster*) predominate: their crowns are often so close together that scarcely a ray of sunshine can penetrate to the soil. Excellent roads lead through the woods, and the summit of the mountain can be reached by well-kept paths. Strangely enough some of these roads end abruptly when they reach the boundary of the mountains. The departement of "Woods and Forests" ends here and that of the „Ponts et Chaussées" begins. These two departments, so it would seem, do not always work hand in hand. The way to the Mont Vinaigre was not hard to find. At first we saw the mountain in front of us, and in the woods we had only to follow the road and, when other roads crossed this, to keep to the north-west. It wound up among the hills. Generally it was hidden in the wood and dark masses of foliage confined our outlook on all sides: then it went up a steep slope and our eyes could range over the tops of the trees away to distant valleys and mountains. But not a house was to be seen, and nowhere did rising smoke betray a hidden hut: nought but solitude. Nor did we meet a single wanderer on our long walk: we were quite alone — almost uncannily alone — in the endless woods. After two hours we reached a human habitation, the Ranger's-house of Malpay, "Maou pays" — bad neigh-

bourhood — as it is called in provençal, in remembrance of the days when it was not safe to travel here.

The Forester's wife was evidently pleased at having someone to converse with, and, while we breakfasted, gave us accurate information about the neighbourhood. She pointed out to us, towards the east, a stretch of the Roman road which can be overlooked from here. The road connected Rome with Gaul and ended at Arlate, the present Arles, whence the "Via Domitia" led to Spain. There were two Roman roads called "Aurelian", which led through the Esterel. The older one followed the coast from Cannes and turned inland, up a valley, at the most southerly boss of the Esterel, reaching Fréjus in a westerly direction. Later the Romans made a second road which ran straight over the mountains, corresponding more or less to the present high-road between Fréjus and Cannes. It was a piece of this road which we were now overlooking. In an unfrequented ravine in Malpay there still lie ancient porphyry pillars — unfinished work of the Romans. But the purplish-red stone is now covered with a thick, black crust. In this district the names of parts of the coast, and some of the mountains, still recall that of the Roman road. The shore near the spot where the earlier of the two Roman roads turned inland is called "Plage d'Aurèle", and the porphyritic mass which rises above it is the "Pic d'Aurèle". Later on the Esterel range was so cut off from all civilization, so withdrawn from new influences, that up to the present day the population call a still used stretch of the older road "lou camin Aurelian".

At Malpay we leave the broad highway and follow the foot-path in an easterly direction. This winds up the south slope of Mont Vinaigre. How comes the mountain by this singular name? From the sour wine which used to grow on its flanks. No traces of former vine-culture remain however, but instead we find on the slopes the most splendid Maquis that it is possible to imagine. Tree Heaths (Fig. p. 175), Broom (Fig. p. 395), Pistachias (Fig. p. 349), Euphorbias (Fig. p. 181), Asphodels (Fig. p. 49): all these bloom at the same time and fill the air with spicy fragrance. For the Provençal spring is short, and plants must hasten before the drought comes. It seems as though Nature wished to celebrate a spring festival here; and unconsciously a feeling of spring penetrates the soul of the wanderer. He forgets all past things: he feels as though he could begin life anew. And why should he not? Is not the earth very old, and does she not awaken to new life every spring? How sweetly the



Galactites tomentosa.

Heaths smell of Almond! Every breath of wind wafts their perfume towards us. We had hardly noticed this odour before, but we had also never before seen such a mass of Erica blossom. Now the air is permeated by a sweet honey-scent: it is emitted by a small Spurge (*Euphorbia spinosa*, Fig. p. 181). This plant has no striking flowers and must therefore make special efforts not to remain unnoticed in the neighbourhood of such rich colouring. Numbers of bees visit it, while the gay butterflies flit round other more showy flowers. One would not mind being a butterfly or a bee amid such surroundings! From the mass of blossoms the dark Arbutus (Fig. p. 37), dwarf Aleppos, Evergreen Oaks (Fig. p. 359) and prickly Junipers (*J. Oxycedrus*, Fig. p. 245) stand out. And, wherever the smallest space remains unoccupied at this rich feast of Nature, the Asphodels (*Asphodelus albus*) crowd in with their spikes of white flowers. They too wish to have their share of the light, warmth and nourishment which is here so lavishly dispensed.

We now ascend slowly, stopping before each flower to watch the bees at work. At length, after an hour's walk, we reach the summit. A whole world lies at our feet! Before us the green Esterel with deep valleys and steep heights, where, from among the foliage, the jagged porphyry rocks jut heavenwards. To the west is the plain of Fréjus, streaked by its silver stream; beyond this the Montagnes des Maures with their dark woods, and then all the bays of the coast far away to St. Tropez. To the north are the limestone Alps, a

pearly grey hue. To the east the Maritime Alps with their snow-clad peaks; in the foreground rich, green country with bright towns and villages, and then again the coast which fades away in mist at Bordighera. Quite near is Cannes, and in front of it lie the Iles de Lérins. Projecting far into the sea is the narrow Cap d'Antibes; and finally to the south, stretching away to the horizon, the boundless expanse of the sea.

The air was so still up here today that the lonely Cork Oak, which grows on the top, was able to bask in the sun. Even this unfortunate tree had been deprived of its protecting cork layer, and in this stripped condition it is obliged to defy the Mistral. Amid the peaceful scenes which surrounded us, this bare tree was like a false note in the harmony.

The road, which we had left at Malpay, continues in a straight line from the foot of the Mt. Vinaigre and soon joins the main-road from Fréjus to Cannes. If you follow this to the east you shortly reach a group of houses, the Auberge des Adrets and the station of the Gendarmerie. The name of this Inn was once in everyone's mouth in Paris, when the famous actor, Frédéric Lemaître, appeared at the Ambigu theatre in a tragedy, the scene of which was laid in an "Auberge des Adrets". Towards the middle of last century all visitors to Cannes, who were in search of sensation, made excursions into the Esterel to see the rooms in the Auberge des Adrets in which a certain Monsieur Germeuil was murdered, or rather was not murdered. For apart from the question as to whether the story has any basis

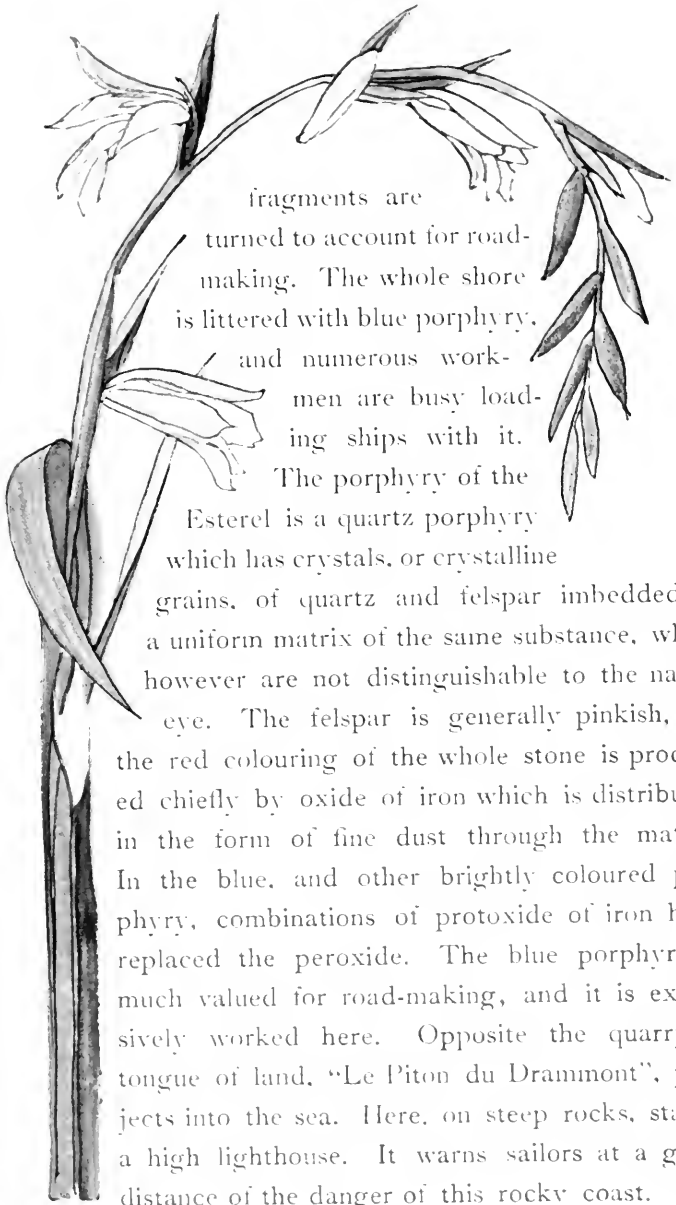
of fact, the play did not deal with this Auberge, but, as the text clearly states, with an Inn of the same name on the road between Grenoble and Chambéry. Georges Sand was among the sensation-seeking visitors who came hither from Cannes in the year 1868. At that time the inhabitants of the house were very indignant if any one began to enquire about this Monsieur Germeuil; they thought that they were being accused of the murder. It is certain, however, that some years before the neighbourhood of that Auberge des Adrets was of evil repute. All those criminals, who had succeeded in escaping from the Gallies of Toulon, sought refuge in the inaccessible valleys and ravines of the Esterel. They used to way-lay travellers not far from this Auberge at a spot where the road is shut in and commanded by the surrounding heights. "When we drove past", writes Horace Benedict de Saussure, "the courier from Rome, who was travelling with us, pointed out to us a battered trunk which was still lying by the road side; it had belonged to a traveller who had been robbed a few days previously". But when in 1822 Gotthilf Heinrich Schubert, "Professor der Naturwissenschaften" at Erlangen, "with the housekeeper who usually accompanied the old dreamer as general manager and adjutant", passed through this same place, the state of things had already improved. A Gendarmerie had been established at the Inn, and Schubert found only an old woman and two children in it. While the travellers were refreshing themselves, the old woman spoke of the notorious robberies. "If only one of those robbers would turn up here again".

she said, "our gendarms would have an opportunity of showing that they are worth their keep". Since the railway has connected Fréjus and Cannes this road has fallen into disuse, and highwaymen would no longer be able to get a living on it. But it is obvious that the Inn was originally built with a view to defence. The walls are unusually thick, and the windows of the lower storey are provided with iron bars. The traveller used to be first well scrutinised through an opening in the oak door, before he was admitted: oblique loop-holes in the inner walls are directed towards the door. The house is, in fact, like a fortress and could only be captured by a regular siege. But now the door stands wide open and little children play about in front.

We turned back to Malpay and there chose a road which led south-eastwards to Agay. We soon reached the Vallon de la Cabre. Here, on every slope, the Laurustinus (*Viburnum Tinus*, Fig. p. 411) displays its corymbs of white flowers. Like the Tree Heath, this shrub has a smell of Almond, or rather both these plants, as a chemist learned in the subject of volatile oils informed me, possess the same aroma of anisaldehyd. Next we find the tangled Honeysuckle (*Lonicera implexa*, Fig. p. 277), an evergreen climber which is one of the characteristic plants of the Maquis. Its elongate, reddish-yellow perfumed flowers form terminal whorls. In appearance the plant is so like our garden Honeysuckle that we welcome this more southern species here as an old friend. The blue Iris (*Iris germanica*) grows right out onto the trodden pathway. The Poet's Narcissus (*N. poeticus*)

peeps at us with its bright eyes from the undergrowth. Long-stalked Tulips (*Tulipa Clusiana*, Fig. p. 407) greet us from a distance with their red and white perianth. The violet corymbs of the Candytuft (*Iberis umbellata*), surprise us by their beauty: we had hitherto seen this lovely plant only in gardens at home. Presently we gather *Ophrys aranifera*, that remarkable Orchid with its spider-shaped flower, and to this we add its bee-shaped sister-flower *Ophrys apifera*. We were particularly pleased with the rare *Limodorum abortivum*, a leafless Orchid bright violet in all its parts. We were soon laden with big bunches of flowers. Suddenly we come across a boulder of porphyry in the middle of the path. It looks top-heavy and leans over the stream as though it were about to fall in. The peasants have named it "Pigeonnier", the Dovecot. There are other fantastically shaped rocks along the road: sometimes they seem to block the valley, and only when we reach the river of Agay do they stand back in a wide semicircle. We followed this river to its mouth. Shattered and jagged, and glowing in the red light the "Castell d'Agay" looks down upon the sea. Like the teeth of a gigantic saw these rocks project in a long line against the sky. We rested by the lovely bay of Agay, with its setting of red porphyry. This place is ten kilometres distant from St. Raphaël on the Mediterranean Railway which follows the coast to avoid the mountains.

Blue porphyry is quarried not far from Agay, on the road to St Raphaël. Large blocks are blasted from the mountain side and cut into slabs and cubes, and the



*Gladiolus
setum.*

fragments are turned to account for road-making. The whole shore is littered with blue porphyry, and numerous workmen are busy loading ships with it. The porphyry of the Esterel is a quartz porphyry which has crystals, or crystalline grains, of quartz and felspar imbedded in a uniform matrix of the same substance, which however are not distinguishable to the naked eye. The felspar is generally pinkish, but the red colouring of the whole stone is produced chiefly by oxide of iron which is distributed in the form of fine dust through the matrix. In the blue, and other brightly coloured porphyry, combinations of protoxide of iron have replaced the peroxide. The blue porphyry is much valued for road-making, and it is extensively worked here. Opposite the quarry a tongue of land, "Le Piton du Drammont", projects into the sea. Here, on steep rocks, stands a high lighthouse. It warns sailors at a great distance of the danger of this rocky coast. The

bay of Agay, which in calm weather is quite empty, is often full of ships in stormy weather. They wait here under the shelter of the mountains for a favourable wind. In Roman times the port of Agathon saved many a vessel from destruction.

CHAPTER VI.

Malinfernet is considered one of the marvels of the Riviera: it is a fairy tale in stone. There is a road to it from Agay, and it is a three hours' drive from St. Raphaël. We preferred the foot path from Le Trayas station which we reached by rail in half an hour. Here we at once crossed the line and climbed up the western slope of the mountain which rose before us. We wander through Maquis almost more luxuriant than what we had seen in other places in the Esterel. We are almost stupified by the honey-scent of the Euphorbias (Fig. p. 181). Wide tracts are yellow with the large flowered *Calycotome spinosa* (Fig. p. 61). The Cistuses (*C. albidus* Fig. p. 83) are just beginning to open their large red blossoms. They smoothe out their crumpled petals, and attract butterflies by the tender charm of their colour. We do not gather any of these flowers, for they are too fugacious: the gentlest breath of wind blows away their petals. What a profusion of gay butterflies animates the hill-side! Flowers and butterflies are naturally associated. *Anthocharis Euphenoides* (Fig. p. 195), a butterfly rare elsewhere, is almost common here. It resembles our Orange-tip, but is sulphur coloured instead of white. The same

orange spots adorn the front wings. It flies restlessly and swiftly through the air.

Thais Polyxena (Fig. p. 195), whose brownish yellow wings are spotted with red and blue and have a dark, scolloped edge, is almost as active. It is like a harlequin, particoloured



Anthocharis Euphenoides.

and fringed. The Swallow tails hover over us in all directions. Soon we reach the Col Lentisque on which grow many Cork Oaks. Several paths intersect here: we chose the one which turns to the right, cross the pass and begin slowly to ascend a wooded valley — the "Ravin" of the stream Escalle. Beautiful Holly trees (*Ilex Aquifolium*) are conspicuous in the luxuriant thicket. Here they grow to fine trees, while in the woods of Germany we see them only as bushes. Germans call the Holly "Stecheiche" because its rigid, coriaceous leaves resemble those of the Evergreen Oak. Chamisso noticed that only the leaves on the lower branches of the Holly are provided with sharp prickles, and that the higher ones are almost unarmed; for they no longer



Thais Polyxena

require to be protected against the attacks of animals. The path turned suddenly westward, and we found ourselves at the entrance of the Malinfernet. Now we see all the red rocks standing out from the dark wood; here glowing in the sunshine and there shrouded in the deep shadows of

the mountains. As we advance, their grouping changes: some vanish, others come into view in an almost endless succession. And a clear stream flows through the dale, at one time rushing noisily along, then gently murmuring, then forming a boisterous cascade. In certain spots it is quite concealed by the green foliage of the trees: in other places it lies open again and brightly mirrors the sky. And then these wondrous rocks! Here we seem to see a spire like that of a gothic cathedral, adorned with carved flowers and animals and all sorts of arabesques: there again a fort with moat and turrets, or an organ with giant pipes: here a slender column, there an angular crystal: here again a statue on lofty pedestal. Is that not the God Osiris enthroned upon these rocks? He bears in his hands, as sceptres, two young Pine trees. At the entrance of this gorge crouches a Sphinx in readiness to make a spring. And yonder by the distant cliff we seem to see a wild hunting scene. The phantom quarry overtops the trees, as if turned to stone in its last struggles. Nature has given free scope to her constructive genius. Her creative forces have run riot. And, as if half ashamed of this exuberance, she has carefully concealed the valley between lofty mountains. In fact the Malinfernet probably remained unknown till December 1851, after the napoleonic coup d'état when political refugees concealed themselves here to escape the pursuit of their enemies.

CHAPTER VII.

Towards evening we again walked out onto the beach of St. Aigulf. We wished once more to behold

the Esterel range glowing in the light of the setting sun. It was a brilliant evening, still and mild, one of those evenings which awaken feelings of happiness in the human soul. Not a breath of air stirred the leaves on the trees. Dark clouds, surrounded by golden rays, were reflected in the lake of Villepay. From the thicket by the shore birds flew up, frightened at our approach. They rose into the air and seemed to trace dark streaks across the bright evening sky. The clouds in the west assumed a crimson hue, and the water, too, flushed with their reflected light. It looked strangely like a lake of blood, and the dark reed thicket bordered it with black. We continued our walk to the beach. Soon the western sky was ablaze and the Montagnes des Maures showed like a giant in the fiery glow. The trees of the forest looked black against the bright background, as though their outlines were traced with crayon. Then the sky paled. On the glittering waves of the sea the white rays of the first stars began to mix with the red afterglow. When we reached the beach it was already so dark that we could no longer distinguish the outline of the coast. The sky was strewn with stars and seemed to scatter innumerable lights upon the sea. We listened to the surging and sighing of the waves and wondered why this land-encircled sea forever makes its plaint. Is it grief for all the suffering which takes place along its shores? This spot also is called after the Saint who was martyred on the Iles de Lérins. Several times we seemed to hear footsteps, but it was only a ripe fir-cone falling to the ground, or a wave, larger than usual.

rolling up the beach and babbling back to the sea. The silvery crescent of the young moon hung above the tree tops. The lighthouses of St. Raphaël and of Drammont shone out clearly in the east; and the Phare de Camarat flashed forth at intervals, as though opening and closing its great fiery eye. Now the fishing smacks are lighted by their flaring torches, burnt to aid them in their quest. The flickering flames cast long, shimmering beams upon the waves. Suddenly a barque, with outspread sails, loomed up huge and ghost-like before us. It concealed the stars, forming a black spot on the sparkling dome of heaven. This vessel vanished as quickly as it had come, noiseless and mysterious, like a phantom ship.

CHAPTER VIII.

Not far from the station of Le Trayas a bright little house peeps forth from the dark green of the trees. Notices at the station describe it as "Hôtel du Trayas et Restaurant de la Réserve". The place is so beautifully situated in the wood, among red rocks, that we determined to stay here awhile. Thus the next day found us again at Le Trayas station with our luggage. We enquired the way to the Hôtel, and a dog, which was close at hand, was pointed out to us with the remark: — "You need only follow him: he waits here for visitors". The dog had approached us, when we stepped from the train laden with hand luggage, and looked at us intelligently. It was a large, black pointer with long, silky coat. We walked to the exit; the dog hastened in front

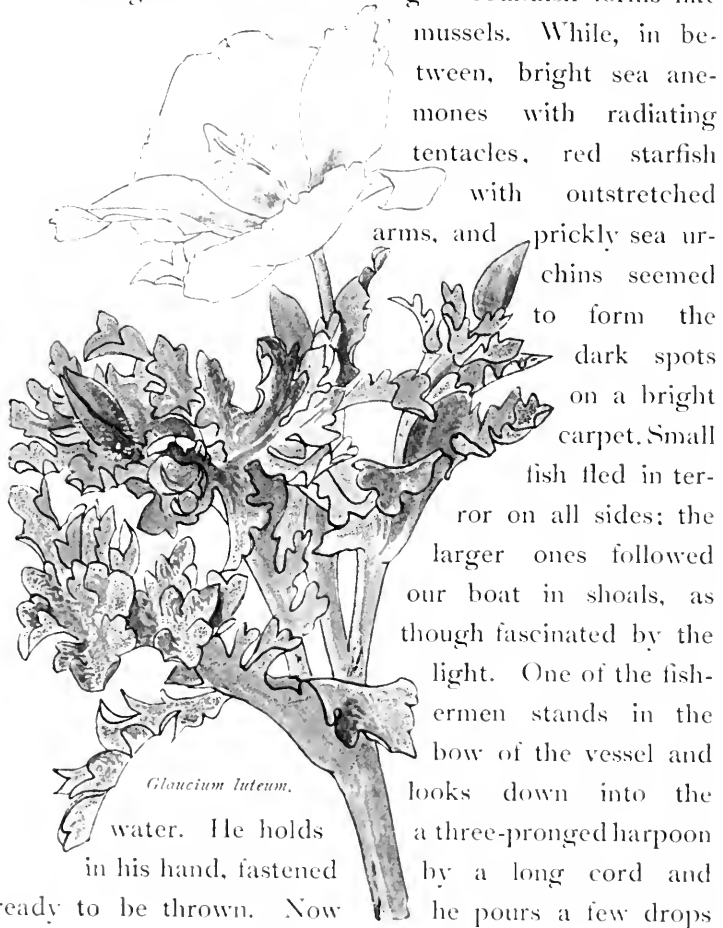
of us, looking round frequently and wagging his tail. He led us along the path by the line, and up into the wood. For one minute he disappeared; it was to visit a small Irish terrier in a forester's house near by, perhaps to inform him that strangers had arrived. This little friend returned with him to the path, evidently to look at us, and then went back. In a quarter of an hour we reached the Inn, a modest building, but with a fair-sized refreshment-room nearly all glass. Apparently the refreshment department of the Hôtel was more patronised than its dwelling rooms, and thus this glass hall was the most frequented part of the building. The dog stopped before the front door and barked. It was not an ordinary bark, but subdued, long-drawn sounds following rapidly upon each other, somewhat between a bark and a howl. Then the busy host, with his whole family, hurried out of the house and offered us their services. We found the rooms very small, but not uncomfortable; and on the terrace it was delightful in such lovely, warm weather as we were having. The house stands close to the sea on a porphyry rock, and commands an extensive view along the coast, past masses of red porphyry and dark green heights away to Cannes, the Iles de Lérins and the gleaming snows of the Alps. In the foreground is the shore, of a reddish hue, and weathered into sharp inlets and caves: to the north, immediately behind the house, rises the Pic d'Aurèle; to the west the landscape is terminated by the mighty rock-mass of Cap Roux.

Many strangers come here from Cannes, but they remain only a few hours to rest and eat "Bouillabaisse"

in the refreshment room, or oysters and lobsters in the "Réserve". Now and again an enthusiastic angler makes a stay of a few days here, as fish are said to abound along this rocky coast and the fisherman has ample opportunity for practising his ingenuity and adroitness. Fishing at night with lights is particularly exciting, and requires, as here practised, much skill. One must have sailed with the fishermen to realize this.

The sea was so calm and inviting that we arranged with a fisherman to take us out with him one evening. It began to get dark soon after we left the shore. There was no moon in the sky, but innumerable stars whose number appeared continually to increase. They were reflected in the water on which we floated. The mountain grew gradually less distinct, and was soon no more than a dark, starless shadow on the sky-line. It was quiet on the sea; we could hear only the soft ripple of the waves against the boat and the rhythmic splash of the oars. But the land breeze bore the sounds of the shore across the sea. We heard from the distance the loud concert of the tree frogs and the shrill chirping of the cricket. The breeze also wafted towards us the odours given out by the resinous Pine woods and the aromatic Maquis. The lighthouses, near and far, shone out on the shore like large stars. We abandoned ourselves entirely to the enjoyment of this scene, and inhaled the balmy air with delight. One of the fishermen now bent over the edge of the boat to light the fire. He fastened an iron brazier to a hook at the bow, having first filled it with the resinous wood of the Aleppo

Pine. This burns up with a crackling sound and flares like a torch. The light penetrates far down into the sea, while the sky above appears to remain quite black. We were gliding over rocks on which marine algae formed veritable fairy gardens. Here there were broad leaves united into rosettes, there long, streaming ribbons, like flowing hair; and there again roundish forms like



Glauclium luteum.

While, in between, bright sea anemones with radiating tentacles, red starfish with outstretched arms, and prickly sea urchins seemed to form the dark spots on a bright carpet. Small fish fled in terror on all sides; the larger ones followed our boat in shoals, as though fascinated by the light. One of the fishermen stands in the bow of the vessel and looks down into the water. He holds in his hand, fastened by a long cord and ready to be thrown. Now he pours a few drops

of oil on the water, to calm the surface, which is ruffled by the breeze. The oars are at rest. Suddenly the harpoon shoots through the deep and impales a fish with its barbed prongs; the fish is drawn up struggling and cast into the boat. Much skill and practice is required for this kind of fishing. It is necessary to take into account not only the motion of the fish, but also the refraction of light by the water, which misleads the eye as to the real position of the fish. We gave up the fishing. This one victim satisfied us. Slowly our fire died out and we again glided peacefully over the wide sea sprinkled with silver stars.

Le Trayas is completely sheltered from the Mistral: Cap Roux wards it off with its broad back. And while the streets of Cannes and Nice are enveloped in thick clouds of dust, there is not a breath of air here, and one can sit and sun oneself comfortably in the open air in front of the house. The east wind is what we have to fear, for it blows with full force here. It rushes straight upon the mountain which bars its way, rebounds from the high rocks and sweeps round them with howling rage. The sea seems as though it would flee in terror over the solid land, but the foaming waves break helplessly upon the unyielding rocks. They surge about in the caves, seeking an outlet upwards, and strike with such violence against the roof that the whole shore reverberates. There is no question then of sleep at night in the little house, and if you at last doze off it is only to dream of horrors and to awaken suddenly in fear and trembling. Even then there is no dust on the porphyry

roads of the Esterel, and in a house further from the shore, and more sheltered, many consumptive patients would be better off in spring than in the resorts filled with limestone dust. But it is frequently cold even here in winter, and this accounts for many specially delicate plants being absent from the flora.

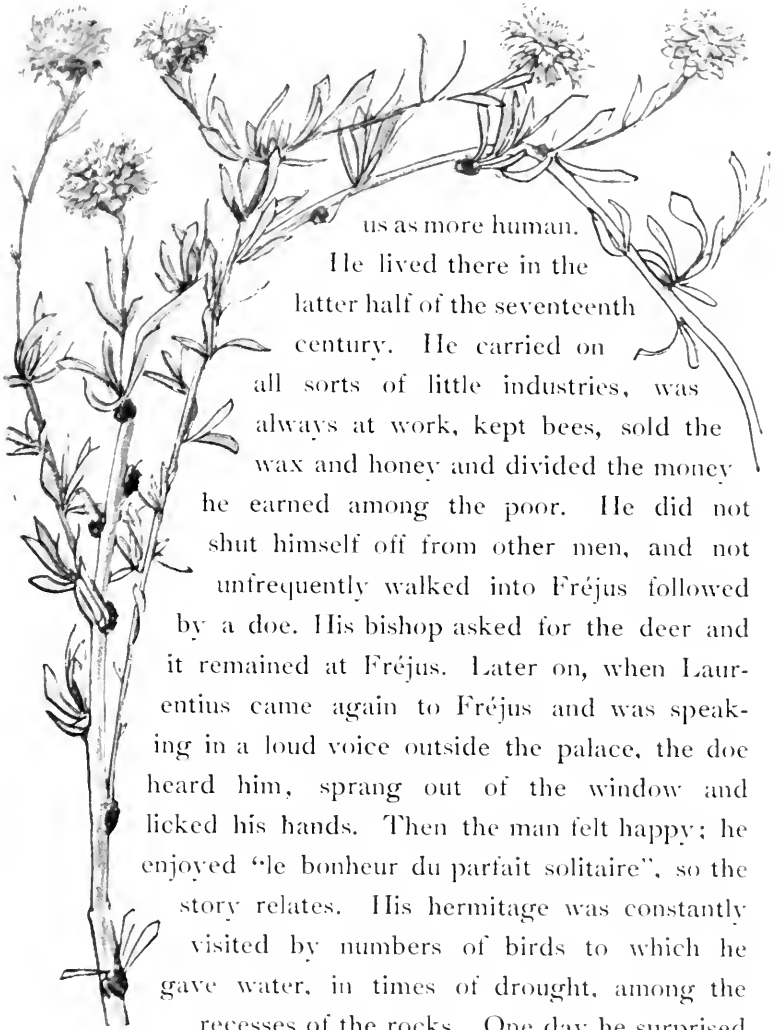
CHAPTER IX.

We were particularly desirous of making the ascent of Cap Roux, the "Grand Pic" of the Esterel, from this spot. At the same time we wished to visit the "Sainte Beaume d'Honorat", and enquired the way to it. The landlord offered us his dog as guide — the same dog which had received us at the station. So "Castor" was called. We had already become better acquainted with him, and by remembering him at meals had won our way to his favour. This dog had a remarkable amount of expression in his face: his eyes were so clear and faithful, and when he looked at us sideways, and the whites of his eyes showed, they looked so intelligent and thoughtful, so very sagacious, that they were almost human. To all appearances Castor understood the meaning of many words, and we were therefore not surprised when the landlord explained to him that he was to conduct us to the Beaume, and with this object repeated the word "Beaume" three times. Castor wagged his tail as a sign of comprehension, but nevertheless stood still. "Ah", said the landlord, "I have forgotten the reward which he is accustomed to receive, the one half now, the other at the cave". So the cake, of which

Castor was specially fond, was fetched. He devoured one half at once with evident satisfaction; the other half we took with us. So we set out, Castor taking the lead and suiting his pace to ours, and frequently looking round to see whether we were following. We walked along beside the railway-embankment in a westerly direction and soon reached the entrance to the valley which separates the Pic d'Aurèle from the cliffs of Cap Roux. The sea runs up into this valley, forming one of the many inlets which are called "calanques" here. A railway bridge spans the inlet. We thought we should have to pass under the bridge, but Castor led us up across the line, without paying any attention to the wire fence. We found that we had to follow his example, for paths led up to the embankment on either side. The wire fence seems there only to be stepped over and to shield the railway company in case of accidents. This is the case all along the line; numerous paths approach the rail on either side, and if you enquire the way even the guard of the line will advise you to climb over the iron fence. Castor led us further north-west along the slopes of Cap Roux; he did not strike into any of the paths which lead steeply up the mountain side, but kept steadily onward. The valley now turned to the west, and we kept along the north slope of the hill. Near the path is a stone hut, which is used by the foresters as a shelter, and close to it a spring flows from the mountain side. Here Castor turned aside to the right and took a steep path up the hill. At first the path was good, but after a while we reached loose stones and rocks.

Then we came to stone steps, and in some places we skirted the edge of a precipice: but here there were iron posts driven into the rock to hold on by. Castor did not seem to suffer from giddiness; he climbed cleverly up, often looking round in dizzy places as though doubting our skill. In front of us on a ledge of rock rose the ruins of a tower. We stood at its entrance looking down across the steep rocks into the luxuriant valley. Green hills crowned with jagged masses of porphyry rose beyond; over the Col Lèveque to the east gleamed the snowy summits of the Alps. And to the west, bathed in misty blue, the Montagnes des Maures closed the horizon. On the other side of the tower is the entrance to the cave. Castor was already lying down in front of it. He looked at us in a self-satisfied way, and did not think it at all necessary to wag his tail when we gave him the rest of the cake. He knew he deserved it, and humility was therefore unnecessary. We entered the cave. To the right there is a cistern. At the back a modest altar has been made, and still less pretentious are the images of the Saints which adorn the walls. St. Honoratus is said to have lived here once as a hermit. It was he who in the year 408 founded on the Iles de Lérins the monastery which became famous later. For centuries past pilgrims have toiled each year, on the first Thursday in May, up this steep mountain-side to honour the Saint. A niche in the cave is said to have formed the hermit's couch. The pilgrims gaze reverently at this hollow in the rock, which they consider to be an impression made by the body of the Saint.

St. Honoratus is said to have come of a distinguished family from northern Gaul. While still young he retired to this retreat. His example was followed by others. St. Eucharius, a Provençal nobleman, lord of Théoule and of Mandelieu, imitated him, but he did not renounce the world as early in life as did St. Honoratus. He must have experienced many a bitter sorrow. For, as I understand from the history of the Diocese of Fréjus, which the Abbé Disdier has published, St. Eucharius was married and had two sons and two daughters. When death robbed him of his wife, he entrusted the education of his sons to St. Hilarius and retired, first to one of the Iles de Lérins, and then to the hermitage of Cap Roux. Here he lived in a cave which was still more inaccessible than that of St. Honoratus. Thus isolated, and devoting himself to silence and seclusion, he had neither the desire nor the opportunity to sin. Here he wrote a devout treatise in praise of solitude. But he was not destined to end his life in this retreat. Envoys from the community of Lyons fetched him away to become their Archbishop. It is difficult now-a-days to realise the spirit of those devout ascetics, whose ideal of perfection was not the fulfilment of the ordinary duties of life, but the crushing of all desires and appetites. Yet times were different then, and the world was so sad that some wished to renounce it. Many a man of noble disposition might consider that his ethical ideal could not be realised under such social conditions, and sought refuge therefore in renunciation. Such strenuous idealism — such self sacrifice, compels our admiration. A later hermit of the hills of Cap Roux, Laurentius Bonhomme, appeals to



*Globularia
Alypum.*

us as more human. He lived there in the latter half of the seventeenth century. He carried on all sorts of little industries, was always at work, kept bees, sold the wax and honey and divided the money he earned among the poor. He did not shut himself off from other men, and not unfrequently walked into Fréjus followed by a doe. His bishop asked for the deer and it remained at Fréjus. Later on, when Laurentius came again to Fréjus and was speaking in a loud voice outside the palace, the doe heard him, sprang out of the window and licked his hands. Then the man felt happy; he enjoyed "le bonheur du parfait solitaire", so the story relates. His hermitage was constantly visited by numbers of birds to which he gave water, in times of drought, among the recesses of the rocks. One day he surprised thieves robbing his bee-hives. In terror the evil doers saw him approaching. But he brought them the beehives, which they had left behind, with the remark that those were the best. Such boundless

benevolence touched the hearts of these miscreants, and it is said that they mended their ways from that very hour.

We stood again outside the cave lost in contemplation of this charming view. On this same landscape St. Honoratus must have looked some fifteen hundred years ago. Then, as now, the porphyry rocks glowed red in the sunshine, and the eternal snows gleamed on the summits of the Alps. The same striving after ideals remains in mankind, but manifests itself in other ways.

We now descend again to the spring, and there strike into a path which leads us to the summit of the mountain from the west. We tried to make Castor go home, but he preferred not to leave us. He seemed indeed no longer to feel it his duty to act as guide; and instead of walking in front of us, strayed hither and thither. His chief delight was to put up birds from the shrubs, and then watch them rise into the air. At one time he appeared to be chasing a large animal, probably one of the many foxes which inhabit the Esterel.

On the summit of Cap Roux, the Grand Pic, or as it was formerly called Vigie de Peyssarin, a prospect unfolds before us the like of which is rarely seen. It is impressive in its grandeur. While from the Mont Vinaigre the eye looks far away over wooded hills to the sea, here we have the blue water at our feet. The green slopes of Cap Roux first incline gently towards the sea, then the cliff becomes bare and drops sheer into the waves, then rugged rocks project and sharp ridges jut out into the sea, imprisoning the water here and there in bowls and crater-like hollows. Finally, after diving below the surface, the

porphyry reappears as a purple reef. The water looks violet against the red rock: it shines like liquid amethyst in a bowl of Rosso antico. All round us the rocks glow in the bright sunlight. Grey and yellow lichens tone down the prevailing red into countless shades. We are completely charmed by this rich variety of hues: it affects the soul like music. So much is our attention attracted by this colouring that at first we scarcely observe the shape of the objects, noticing how the tones blend, how they fade away or become prominent. How wondrously this brown-red mass contrasts with the blue of the sea, which rises behind it to the horizon! How yonder block of porphyry detaches itself from the pearly-grey background of the limestone Alps! There again red peaks stretch forth towards the brilliant sky. To the east, above Nice, the dazzling snow of the Alps crowns the green foot-hills like a silvery diadem. Our eyes return to it continually. Below, near the coast, the azure sea lies sparkling: far away to the south it mirrors the sun, throwing back a flood of light as if from its own depths.

A large boss of rock to the west covers the valley of Fréjus: behind it rise the Montagnes des Maures, a velvety green. We gaze along the coast, away to the Golden Isles. To the east the Golfe de la Napoule and Cannes lie before us almost within reach. The Iles de Lérins emerge like emeralds from the golden water. We see them now all united into a single gleaming group — in the foreground St. Honorat, next to it Ste. Marguerite, and to the east, near St. Honorat, the small St. Féréol: behind this again the Cap d'Antibes dips its flowery shores

into the sea, dividing the adjacent bays. Lining the Baie des Anges — the wide bay of Angels -- is the white town of Nice set in a semicircle of green hills; and then rise mountain upon mountain until beyond Bordighera the outline of the coast fades away in the misty distance.

This view made no impression upon Castor. He carefully sniffed the stones upon which earlier tourists must have eaten many a breakfast. Without doubt he devoted all his imagination to conjuring up the details of the different "menus"; then he yawned repeatedly, lay down and went to sleep. Hours went by before we decided to return.

CHAPTER X.

We could not well leave the Pic d'Aurèle unnoticed, as it was so close at hand. We felt bound to make the ascent, if only in honour of that Aurelius from whom it takes its name. Which Aurelius it was whose name this rock bears, and who immortalised the old Roman Road, is not known for certain. In all probability it was Caius Aurelius Cotta, because he designed the plan for this great highway and carried out its construction from Rome to Pisa in the year 241 B. C. Emilius Scaurus then continued the road to Vada Sabatia, the Vado of today, which lies between Savona and Albenga, and Augustus carried it on far beyond Ventimiglia to Arles. The stretch from Pisa to Vada Sabatia was first called the road of Emilius Scaurus, to distinguish it from that Via Emilia which united Rimini and Piacenza, and owed its origin to Emilius Lepidus. Later the name of

“Via Aurelia” was given to the whole road which extended from Rome, through Genoa, into Gaul. We know all the details of this road from the “Peutinger’sche Tafel”, a thirteenth century copy, which we owe to a monk of Colmar; of an Itinerary dating from the time of the Roman Empire. Konrad Celtes, of Worms, discovered this copy and entrusted it to the worthy collector of antiquities, Konrad Peutinger of Augsburg, to be published; this however was prevented by his early death. Later on this important document was acquired by the Court Library of Vienna, and has since been repeatedly printed.

We climbed straight up from the Hôtel du Trayas, crossing the railway line in the customary manner, and soon reached a broad road which skirts the mountain in a westerly direction. We had to follow this road for some distance with the green valley which separates the Pic d’Aurèle from Cap Roux, always in front of us. On the northern slopes of Cap Roux the dark red rocks are sharply outlined, and among them is clearly seen the tower which guards the cave of St. Honoratus. We chose the first footpath which turned upwards towards the summit of the Pic d’Aurèle. The mountain is only about 1,000 feet high, and can therefore be climbed without much exertion. The view from the top is similar to that which we enjoyed from Cap Roux, only less extensive. For Cap Roux conceals the whole coast to the west, and only the valley on its northern side permits of a peep through to the Montagnes des Maures. We see Fréjus lying in the valley of the Argens, and now easily

understand why the Romans first chose this vale for their road from the coast to Forum Julii. From this place the eye ranges unchecked over the snow-clad Alps and the wide coast. The bare porphyry rocks at the top of the mountain are deeply cleft and resemble the ruins of a Titan's stronghold. It is necessary to approach the edge with caution, for these rocks are liable to fall over into the valley without any warning.

Every ramble in the Esterel suggests new excursions. With its carefully kept roads and woods this mountain range resembles a vast park adorned with huge rock-masses which Nature would seem to have disposed with artistic skill, rare taste, and an expenditure of superhuman energy.

Castor has become quite friendly, and although distant views do not fascinate him, he accompanies us on all our expeditions, and climbed the Pic d'Aurèle with us also.

A road leads past our Hôtel westward to Agay. It follows all the indentations of the "Plage d'Aurèle", and from it also, across a foreground of red rocks, a view of the snowy alpine heights is soon obtained. We left the main road and descending to the shore continued our way climbing up and down along the rocky coast. The sea is calm, and only gentle wavelets ripple up the beach with scarce a fringe of foam. The bottom is seen clearly through the crystal waters. There, in purple hollows, are strange forms of many colours shining like precious stones. The Provençal sun bathes us in its glory, and even the sea and the rocks radiate light. The air quivers

above the heated ground. Everything shines and glitters around us; the distance fades into a golden mist and the gleaming snow of the Alps seems to hover over an abyss.

But we must take leave of Le Trayas. Castor accompanied us to the station. We stroked him gratefully before we parted, and he gazed for long after the train which bore us away. He was distressed; it seemed to us almost as though tears stood in his eyes.



THIRD JOURNEY.

CHAPTER I.

The northern winter had been such a long and dreary one, that we were yearning for warmth and sunshine. But even from the Mediterranean bad reports were continually arriving of incessant cold and consequent injury to the vegetation. As late as the beginning of March snow had fallen and clothed many places on the Riviera in a mantle of white. However at last the springtide sun prevailed there; we received more favourable news, and a few days later saw us in Cannes. When we passed the Alps, glorious spring greeted us with a radiant countenance. The journey in this sunny region, where Nature is busy awakening everything to life, was like a veritable festal procession. And so we arrived on the shores of the Mediterranean.

While in the North it was still snowing and the sky was heavily laden with dark clouds, here the sun shone brightly in the blue firmament. It was reflected in the sea, and its warm rays, penetrating to our inmost hearts, dispelled the gloom which had gathered there during the dark days. On the Riviera di Ponente too, both plants and people had suffered from the unusual severity of the winter. But most plants are hardier than mankind and quickly recover. On the walls of the houses rusty withered Bougainvillias were beginning here and there to shoot forth, forming tufts of crimson bracts among the dead foliage. Heliotropes were sprouting through the earth, and very soon fresh leaves of a vivid green would replace the old spotted brown ones on the Fan Palms. The Acacias had bravely withstood both frost and snow and were now completely covered with blossom — masses of bloom lighting up the landscape which was still rather bare. Indeed the vegetation was very backward for the time of year, rose trees showing only closed buds, whereas they are generally in their full splendour from the middle of winter onwards. Not a rose was to be seen in any of the numerous flower-shops in Cannes: they would have to be ordered from the hothouses of the north. Far worse does the suffering patient fare who has come hither this winter in search of relief or recovery. For he is kept a prisoner in rooms which are often insufficiently heated. How many lives have been shortened by this sojourn! It is doubtful whether the worst invalids should be sent here.

CHAPTER II.

As we did not care to live down by the sea in the dusty quarters of Cannes, we ascended the slope that overlooks the town from the east, as far as Californie. Over the beautiful gardens of the Hôtel Californie we look onto the Croisette, the small tongue of land that separates the Golfe de la Napoule from Golfe Juan. Beyond lies the Ile Ste. Marguerite, and in the morning light every detail of the fort which crowns the island is distinctly delineated. Of the Ile St. Honorat the church alone is visible: the rest is hidden by the sister isle. To the west, above the flowering Acacias, stands the old town of Cannes on the hill whose summit is crowned by the old castle, forming a picturesque and varied scene. Less pleasing in outline is the new part of the town along the bay: but, as seen from this elevation, it is broken and diversified by the luxuriant gardens of the hills. Our eyes rested with delight on the jagged contour of the Esterel. It is yonder we take our first look in the morning, when the sun gilds the summits and every hamlet stands out dazzlingly white at the foot of the mountains: and yonder again do our eyes turn in the evening when the sun is disappearing behind the long chain of hills, his rays extending over the evening sky like a fiery fan. Then, one by one, the lighthouses flash out along the coast, and in the twilight Cannes sparkles with innumerable lights. This spectacle was repeated every evening, but we never wearied of it.

At nightfall the tree frogs begin their concert in front of the Hôtel — a sound familiar to all who frequent

the Riviera in spring. At this season of the year these creatures assemble in all the reservoirs and call to each other. The remarkable volume of sound is due to the fact that, in the males, the dark skin of the throat swells up into a large sound-bladder. At ordinary times these pretty bright-green creatures live in the shrubs and trees. We were interested in searching for them in the daytime, in the garden of the Hôtel, and noting how well their colouring adapted itself to their temporary environment. On light leaves they are light coloured, on dark leaves dark, and therefore difficult to see. This is an instance of protective resemblance which enables them to escape the notice of their enemies and also prevents their being observed by the prey they are watching for. It is really amusing to see how a tree frog hunts insects, how cleverly he catches them and how high he will spring in order to seize them.

In spite of the rain, which had fallen abundantly, and the daily watering, the road leading from Cannes to Antibes was perceptible only as a long streak of dust intersecting the verdure of the gardens. This white streak was particularly distinct in the afternoons, when carriage after carriage drove along the road raising fresh clouds of dust. This powdered limestone is as fine as flour; it penetrates everything and rises so high that it colours all the trees in the neighbourhood grey to their very tops. Visitors to Cannes breathe this dust every day and all day, regardless of the fact that they mostly come south for the benefit of their lungs. This dust unfortunately prevails in many places on the Riviera, particularly where the limestone

mountains reach the coast. But what induces invalids to frequent the roads or live near them! I myself detest dust, even though my lungs are sound. I am a good walker and prefer being on foot to driving. So the Hôtel was very conveniently situated for me. From it there are foot-paths that lead very soon to wood and Maquis. From the pine-clad summits of La Maure, about 820 feet above sea level, the most glorious and surprising views are obtainable of luxuriantly green valleys, of the snowy Alps and the blue coast. This spring the Maritime Alps were particularly grand as the snow lay low down on them. They reminded one of scenes in the Bernese Oberland, but were far brighter, being bathed in the glory of the Italian sun. I was quite content to linger on the heights of La Maure under the Aleppo Pines, but I avoided the "Observatoire" on principle, it being the recognised point of view to which carriages were driven up slowly, in the afternoon, by tired horses, along the dusty road. A tower has been erected there, from which, on payment of a fixed fee, you may admire the beauties of Nature. There is generally a crowd, and the music from a neighbouring inn does not help to improve one's frame of mind.

CHAPTER III.

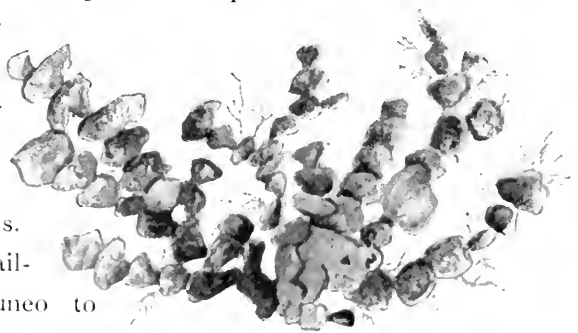
The road up to the "Observatoire" crosses a canal which supplies Cannes, Golfe Jouan and Antibes with water. It conducts the same water which the Romans drank in Forum Julii. They enclosed one of the springs of the Siagne, above Grasse, and conveyed the water to

Fréjus by means of a covered aqueduct, which had to pass through a tunnel — the tunnel of Roquetaillado — fifty yards long. The modern canal which leads to Cannes is considerably inferior to the Roman aqueduct, for it is not covered in and is therefore unprotected against pollution. From La Maure this canal can be followed in a north-westerly direction for miles. A foot-path runs beside it, and it rises so imperceptibly as to appear almost level. It continues in winding curves along the hill-side and commands varied views of Cannes and the Esterel. Soon we find ourselves above Le Cannet, a village north of Cannes, three kilometres from the sea, and well sheltered by hills from the winds. You look down on big hôtels, for Le Cannet is a resort for those invalids to whom the sea breeze is injurious. Further on towards the north Mougins crowns an isolated hill 850 feet high. It is a picturesque spot, composed of compact masses of houses with but few windows facing outwards. Thither the Oxybii are said to have once retreated when the Romans occupied the coast. It is only half an hour's walk from Mougins to the tower of Castellars, which commands by far the most extensive view of the chain of Alps.

All the hills which separate Le Cannet from Vallauris can be easily reached from the path along the canal. From their summits we can see, beyond Mougins, Grasse bathed in sunshine at the foot of the grey limestone hills; and to the east in the hollow below lies Vallauris. Farther away you can see Golfe Jouan, Antibes, Nice and the coast-line in the hazy distance; and above the hills that shelter Vallauris, adding a magic finishing

touch to the whole scene, are the snowy masses around the Col di Tenda. The Italians have for some years been constructing a railway which is to connect Turin with the Mediterranean coast, and the line is finished from Turin up the northern slope of the pass to Limone. There is already a long tunnel running under the Col di Tenda, which affords facility for traffic. Here the valley of the Roja begins and reaches the coast at Ventimiglia. But political objections and conflicting interests have combined to interfere with its progress, and the railway is, consequently, not yet completed. It is even undecided whether the terminus is to be at Ventimiglia or at Nice. This line will in time open up a splendid part of the country, for the Gola di Gandarena, through which the Roja rushes between sky-high precipices, is scarcely less grand than the Via Mala. Hitherto this mighty gorge, which is one of the most imposing in the Alps, has only been known to those who visited the small village of St. Dalmazzo di Tenda for the baths in the summer season; or to those who ventured on the journey early in spring over the Col di Tenda in spite of deep snow. We did this once

and have never forgotten the impression it made on us. When the railway from Cuneo to the coast is at last



Halimeda Opuntia.

completed it will be the shortest route between the south of Switzerland and the health resorts of the Western Riviera. The road over the Col di Tenda is said to be the oldest that united the Gallic coast to the plains of northern Italy. It is probably the Via Herculea which was constructed by the Phoenicians twelve or thirteen hundred years before Christ in order to connect Spain and North Italy by a route across the Maritime Alps.

Vallauris, insignificant as it is, has managed to achieve a certain reputation. This it owes to its brightly coloured semi-porcelain ware, the "Faïences d'Art", which is to be seen not only on the Riviera, but in shop windows of all the larger European towns. It is lead-glazed earthenware baked in a very hot furnace. The Massier family are the chief proprietors of this industry, and their name is to be seen everywhere on the warehouses and the factories. The large warehouse in Golfe Jouan particularly attracts the attention of strangers as they drive along the dusty highway between Cannes and Antibes, on account of its garden gaily ornamented — or rather disfigured — with coloured faïence!

Although Vallauris has not much to boast of in itself the excursions among the hills in its neighbourhood are most attractive. From Vallauris you can walk through a pleasant ravine down to Golfe Jouan, or through the wood on the slope of the hill, past Cannes-Eden, straight back to Cannes. In the woods here Cork Oaks are still numerous, while further east there are none. This is due to the difference in the soil, for mica-schist and gneiss crop up here and there near Cannes and

produce similar vegetation to that in the Montagnes des Maures.

CHAPTER IV.

The island of Ste. Marguerite lies about three quarters of a mile from the extreme point of the Croisette and can be reached by boat in twenty minutes. Twice a day a small steamer plies between the port of Cannes and the Iles de Lérins. It touches at both islands, and the excursion may be prolonged into the afternoon if you go by the first steamer and return by the last. We wished to see the coast lighted up at evening from the Iles de Lérins, so took a boat at the Croisette in the afternoon. The brilliant sunlight reflected on the smooth sea made it look like burnished steel. A bluish haze lay on the water. The island opposite drew nearer till the walls surrounding the Fort, built by Richelieu, were sharply outlined. Above the rocks to the east peep forth the windows of this notorious prison which has on more than one occasion so strangely riveted the attention of the public. For here was incarcerated that mysterious prisoner, known as the "Man in the Iron Mask", whose identity has exercised the ingenuity of historians. Marius Topin has counted no less than forty-two authors, from the time of Voltaire to the year 1870, who have written about this prisoner. Nevertheless the riddle was not solved and renewed attempts were made to elucidate the mystery. The result was, as Paul de Saint-Victor expressed it, "un concours d'Oedipes autour du Sphinx enchainé". Voltaire had maintained that the mysterious prisoner was a brother of Louis XIV., and by

means of Alexandre Dumas' novel, "Le Vicomte de Bragelonne", this fable was spread far and wide. After most careful sifting of all the documentary evidence by Funk-Brentano in the "Revue Historique" of 1894, we may take it as proved that the "Man in the Iron Mask" was Count Hercules Anthony Mattioli, Minister of State to the Duke Charles IV of Mantua. In 1770 Baron Heiss, "ancien capitaine du régiment d'Alsace", a prominent bibliophile had already expressed this opinion which, however, was not generally accepted, and the same assertion by later experts met with as little credence. The report that the prisoner was a scion of the Royal House gained great popularity during the French Revolution.* And yet Baron Heiss was right. This Mattioli, with whom he had identified the "Man in the Iron Mask", was born in 1640 in Bologna and came of a much respected family. He early distinguished himself by his abilities, and soon after his twentieth year was elected Professor at the University of Bologna. Charles III of Gonzaga made him his Secretary of State, and his successor Charles IV made him his Minister. Mattioli was very ambitious and intriguing. The Abbé d'Estrade, Louis XIV's ambassador at the Venetian court, took advantage of these weaknesses to make use of him for the King's plans. Mattioli had induced the frivolous Duke of Modena, who was always in money difficulties, to sell the fortress of Casale Monferrato to France, and this won for him the favour of Louis XIV. Since gaining possession of the fortress of Pignerolo, the French had been masters of the approach to Piedmont; and the acquisition of Casale had now given them access to the fertile plain

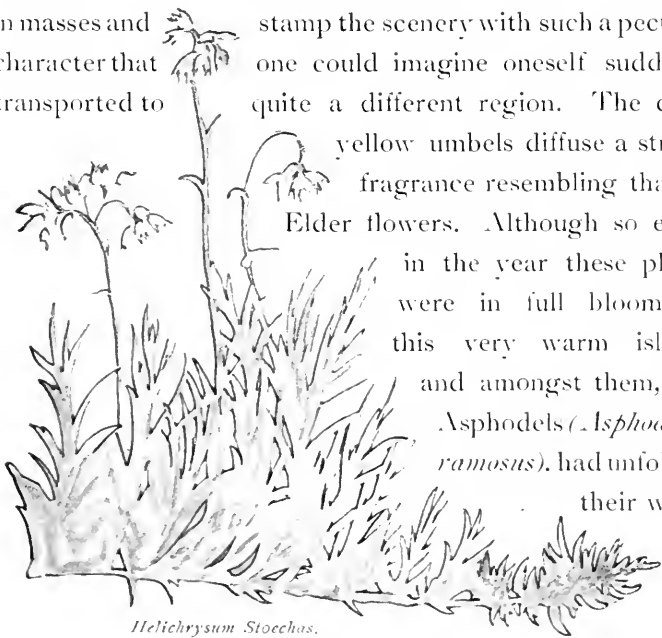
of Milan. For bringing this about, Louis XIV thanked Mattioli in an autograph letter, received him at Versailles, and rewarded him with money and costly gifts. All this did not prevent Mattioli, two months later, from betraying to Austria the designs of Louis XIV and those of the Duke. Louis XIV and Louvois were greatly enraged and agitated at this. The Abbé d'Estrade was commissioned to seize Mattioli by stratagem. Pretending not to know anything about the betrayal, the Abbé enticed Mattioli to a place close outside the town under the pretext of paying him further moneys for his services. The carriage containing the Abbé and Mattioli was immediately surrounded, and Mattioli was consigned to the fortress of Pignerolo. As the affair involved a very serious violation of national rights it had to be kept secret, and Louis XIV's express orders were that no one was to know what had become of Mattioli. Mattioli was therefore compelled, whenever he went abroad, to wear a mask, not of iron, but of black velvet. At Pignerolo Mattioli had been handed over to the notorious St. Mars, and he was obliged to follow him to the island of Ste. Marguerite, and later to the Bastille, where he died on November 19th, 1703. Louis XIV's explanation to Madame de Pompadour, who repeated it to the Duc de Choiseul, namely that the Man with the Mask had been an Italian Minister, corroborates this. Later Louis XVI also, gave the same explanation to Marie Antoinette. So that in reality the legend concerned a man of but little importance, who does not seem to have even merited any sympathy, and it was only the mask which he was compelled to wear, that lent so much interest to the story.

It is said that after the Revocation of the Edict of Nantes by Louis XIV, Protestant ministers also had languished in this prison. Napoleon I, on the other hand, imprisoned a Roman Catholic priest here — de Broglie, Bishop of Ghent. Then there were less distinguished prisoners, such as Mamalukes. But the imprisonment of Bazaine again attracted universal attention to Ste. Marguerite. Bazaine succeeded in escaping. His wife, a young Mexican, and his former Adjutant Villette who had accompanied him to Ste. Marguerite, aided his flight. It is said that he let himself down by a rope to the rocks and waited for his wife in tattered clothes, with wounded hands and blood-stained face. He was then obliged to cast himself into the sea and swim to the boat which had come to fetch him, as the stormy waves prevented its landing. But it is quite certain that this was a fable, deliberately invented to conceal the truth. It seems probable that secret orders were given to let Bazaine escape, in which case his wife would be sure to meet him.

It was as calm as a lake near these rocks today, and we landed with ease on the stony shore. The Fortress itself is hardly worth a visit, unless you wish to be edified by the extraordinary thickness of the walls, and the triple grating to the windows in the prison rooms. Soldiers invalided home from Algiers and the more distant colonies, are now lodged in the Fortress. From the terrace they can enjoy a distant prospect of overwhelming grandeur, but they seem to prefer to sleep the day away in the Pine woods close by.

We also wished to go there, so we took the path up over the slope west of the Fortress. We are soon in the midst of the bushes of the Maquis. What strikes us most is the luxuriant growth of the Umbellates around us. We had seen quantities of the modest *Smyrniium Olusatrum* in other places on the Riviera, and had always noticed it on account of its flowers which are of an unusual colour for Umbellates — a peculiar golden green. It received its specific name of *Olusatrum* (Black kitchen herb), because its young leaves and shoots were eaten as a vegetable by the Romans. Another Umbellate, the *Ferula nodiflora*, which we found side by side with the Smyrniium, grows over two yards high. We had seen similar Ferulas in the Gardens of La Mortola. Here they grow in masses and stamp the scenery with such a peculiar character that one could imagine oneself suddenly transported to

quite a different region. The deep yellow umbels diffuse a strong fragrance resembling that of Elder flowers. Although so early in the year these plants were in full bloom on this very warm island, and amongst them, the Asphodels (*Asphodelus ramosus*), had unfolded their white



Helichrysum Stoechas.

inflorescences which were a yard high and much branched. Thus we were surrounded by classical plants — the *Ferula*, whose pith smoulders like tinder and is said to have been used by Prometheus in order to steal the fire from Olympus; and the *Asphodel* which forms meadows in the nether world where Minos holds jurisdiction over souls. We enjoyed a singularly pretty view of the opposite coast framed, as it were, by these plants. Stretched out before us lay Cannes, coquettishly gay in the brilliant sunshine. The snowy masses of the Alps seemed to be floating in the air beyond Golfe Jouan, veiled in that bright blue mist peculiar to the sky of Provence. From the blue expanse of sea and the green hills of the coast the landscape rises step by step, culminating in the grand snow-capped giants of the Alps. It required some resolution to tear oneself away from this spot and to continue the excursion to the opposite shore of the island. An avenue of *Eucalyptus* trees leads through the Pine wood, at the end of which the boat awaits us.

Immediately in front of us now lay the island of St. Honorat, separated from Ste. Marguerite only by a narrow channel. Most enjoyable is the passage across the shallow water whose azure tones blend with the colours of the clear sea-bottom, of the dark ledges of rock, bright patches of Algae, and green meadows of Grass-wrack (*Poseidonia*). Down below the water shows every shade of sapphire-blue, emerald-green and purple: it varies in tint like opal, glistens like mother-of-pearl and is reflected quiveringly against the gliding boat.

The Ile St. Honorat was called by the Romans "Lerina". St. Honoratus came from his hermitage in the Esterel to this island in the beginning of the fifth century. He found it, so the legend runs, full of poisonous snakes which made it impossible to live there. But the Saint pronounced a great anathema over the snakes and they were destroyed. He climbed up a Palm tree and, at his entreaty, the sea came and washed the snakes away; he prayed to God and out of the ground a spring gushed forth. St. Honoratus was soon joined by Caprasius, the old man who in later times was also honoured as a Saint. Followers came from all parts, and the monastery then established soon gained a considerable reputation. There St. Vincent, one of the most prominent monks of Lérin, wrote the "Commonitorium" against heresy, a work which is often cited in our times in controversies about the dogma of infallibility, particularly the following sentence: "What has been believed by all, everywhere and always, that is truly catholic". To this monastery also belonged St. Hilarius, who, like St. Honoratus, later became Bishop of Arles; likewise St. Maximus, who held the see of Fréjus; then Faustus, Bishop of Reji, who is reckoned among the Saints, but whose orthodoxy was very much doubted; then St. Salvian, St. Valerian and the two sons of St. Eucharius; St. Veranius, St. Salonius and many others. From the little island Lerina, which was named St. Honorat after the founder of her monastery, no less than twelve archbishops, twelve bishops, twelve abbots and four monks were canonised. "Oh blessed hermitage, Oh thrice happy island that hast trained so many sons

of Heaven!" Well might the Archbishop of Arles, Caesarius, son of the Count of Châlons, exclaim on his death-bed, in the year 542: "Beata et felix insula Lyrinensis!" In honour of all these Saints a special festival — that of "All Saints of Lerina" — was celebrated on the 15th of May. About the year 690 the monastery numbered upwards of 3700 monks. How could they all have found room on the little island, which is only about a thousand paces long and four hundred paces broad! This sudden prosperity of the monastery carried with it the germs of destruction. The ascetic life disappeared more and more. At the time when St. Caesarius was a monk at the monastery the rules of the Order were extremely strict. Each monk lived alone in his cell and there was neither a dormitory nor a kitchen. St. Caesarius lived on herbs and broths which he cooked on Sundays for the whole week. All this was altered later, and by the end of the seventeenth century, as Abbé Disdier relates, the Popes were compelled to interfere in order to restrain the irregularity of the monks. Saint Aigulf, sent there to establish rigorous discipline and to convert the monks to a better mode of life, was mutilated by them and handed over to pirates. When the Saracens came, in the year 732, they plundered the monastery and murdered all its inmates. Only St. Eleutherius was left alive, concealed in an inaccessible crevice of the rock, where he supported himself on roots and shellfish for a space of eight days. The monastery flourished again to some extent, but the security and peace of former days had vanished from the island; and the abbot Adalbert, in the year 1073, built

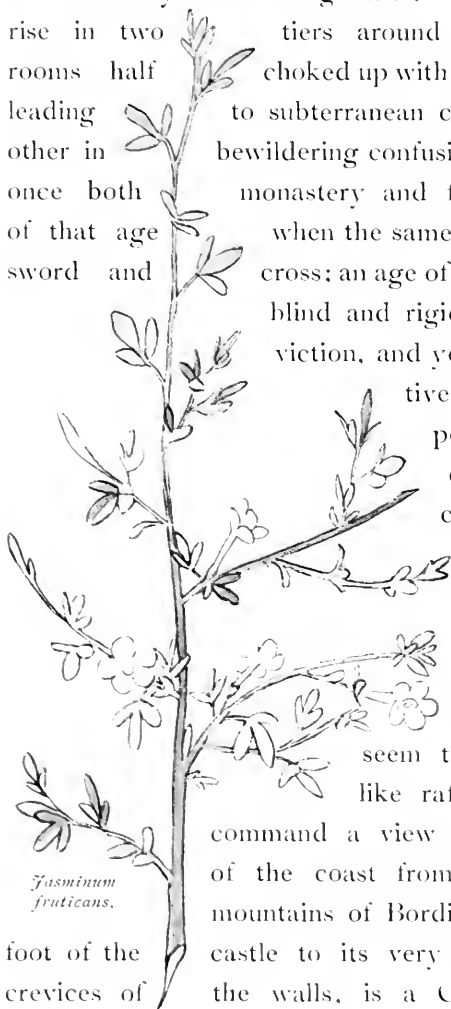
a strong quadrangular tower on the shore facing Africa, and keeping watch over the sea. This tower was large enough to accommodate all the monks; they could hide the monastery treasures in it and also defend themselves effectively from their old enemies the pirates and Saracens. Thus it came to pass that the monastery not only continued to exist, but also enjoyed great prosperity and produced many an abbot of spiritual eminence. In the sixteenth century it possessed one of the richest sanctuaries and a famous library. But in the seventeenth century, during the pontificate of Gregory XV, it began to fall into decay; and when it was secularised in the year 1788 it numbered but four monks. The treasures of the monastery were divided between the churches of the neighbouring parishes. Many valuable objects disappeared during the French Revolution, amongst them a silver reliquary containing the remains of St. Honoratus which had been deposited in Cannes. This artistically worked reliquary dated from the time of Francis I, who after the battle of Pavia passed the night of June 21st 1525 as a prisoner in the monastery. In the year 1791 the monastery was sold by auction and strangely enough afterwards came into the possession of an actress, whose father, Alziary de Roquefort, had purchased it. She herself, under the name of Sainval, had achieved brilliant triumphs at the Comédie Française and retired hither out of pique against her rival the equally celebrated Vestris, and lived for a time in one of the monks' cells in the strong tower.

The island of Ste. Marguerite was called by the Romans, "Lero". Strabo relates that a temple once adorned

this island and that the Ligurian pirates offered up sacrifices there. There is a legend which connects the name of Ste. Margu rite, which the island now bears, with the sister of St. Honoratus. It relates how, longing very much to see her brother, Margu rite came to Lerina and fell at his feet. The rules of the Order prohibited the presence of women at Lerina, so St. Honoratus took his sister to the island of Lero, where she abode and became Abbess. Margu rite bid her brother farewell under a cherry tree in full bloom and he had to promise that he would go and see her as often as the tree blossomed. The holy Abbess prayed so effectively that the cherry tree blossomed every month!

In the year 1869 monks again inhabited the monastery of St. Honorat. The see of Fr jus had acquired this monastery in the year 1859, and ten years later sent Cistercians thither. These monks are clothed in white with black caps, black girdles and scapularies. Women are not permitted to enter the monastery, but they do not lose much by this, for scarcely anything remains of the older parts of the building, and the church is of quite recent origin. The castle erected beyond the monastery on the sea shore has far wider claims to interest, and ladies are not prohibited from visiting it. It is a strong building of cut stone that has defied the ravages of time. Pierced by but few windows and battlemented, it distinctly shows the purpose for which it was originally built. Seen from some distance this grey castle stands out strikingly from the sea and the violet background of the Esterel mountains; the dark green Pine

trees, overhanging the shore, form a frame to the picture. In times of danger all the monks of the monastery were able to take refuge with their treasure in this castle. A cistern in the middle of the open courtyard supplied the necessary drinking water. Picturesque colonnades rise in two tiers around it. Ruined arches, rooms half choked up with earth, secret staircases leading to subterranean chambers succeed each other in bewildering confusion. The castle was at once both monastery and fortress, characteristic of that age when the same hand often held both sword and cross; an age of passionate excitement, blind and rigid in its force of conviction, and yet not wanting in creative power and in a peculiar poetic sentiment of its own. A winding staircase leads to the top of the tower whence a fine prospect is unfolded to view. We look down on the Iles de Lérins, which seem to float upon the sea like rafts of green, and we command a view of the whole stretch of the coast from St. Tropez to the mountains of Bordighera. — From the foot of the castle to its very top, growing in the crevices of the walls, is a Crucifer. This is the



*Jasminum
fruticans.*

foot of the
crevices of

violet sweet-scented Winter-stock (*Matthiola incana*, Fig. p. 289), called in German "Levkojen", which visitors to the island are so eager to get, but which fortunately has established itself on the castle in quite inaccessible places. This plant grows wild here, for the Mediterranean region is its habitat. It is not named after its former neighbour the "Man with the Iron Mask", but after Pietro Andrea Mattiolo of Siena, who called himself Matthiolus and was Imperial Physician in Vienna during the first half of the sixteenth century. He also gained a great reputation as a botanist, particularly as Commentator on Dioscorides. The Greek "Leucoïon", which in German has changed into Levkoje, means white violet. A great number of plants were called by the Greeks "violets" and these were distinguished from each other by means of additional adjectives. Our Violet proper was called by Theophrastus "melanion", the dark, while the Stock, Wallflower and the Dame's Violet (*Hesperis*) go by the name of "Leucoïon", light violets. The Romans used the word "Viola" in the same way, adding the term "purpurea" when they meant our Violet.

St. Honorat is much smaller than her sister isle, but St. Honoratus chose it as the site of his monastery on account of the spring there. Jagged rocks jut up out of the sea near the castle, they are called the "monks" and form a natural defence to the island. The force of the sea is broken by them when storms from the south drive the waves against the island. There are a few chapels on the beach, relics of by-gone times; fragments of marble pillars and capitals may be found amidst Myrtle

and *Lentiscus*, reminders of former splendour. For fifteen centuries did the monks remain masters of these islands, as well as of part of the opposite mainland. They now devote themselves to an Orphan Asylum which stands near the monastery. There the boys learn various crafts. The building also contains a printing press, in which old ecclesiastical works are reproduced. This press presented Pope Leo XIII. on the occasion of his jubilee, with a richly ornamented work containing the "Magnificat" translated into "a hundred and fifty" different tongues. The monks have recently begun to manufacture a Liqueur, made from herbs, which is called "Lerina" after the ancient name of the island.

As the giant *Ferulas* predominate in the vegetation of the Ile Ste. Marguerite, so does the *Cistus* in St. Honorat. There is no lack of Pine trees either on this island, indeed they cover the greater part of it; but it is the rich colouring of the *Cistus* which leaves the strongest impression on my memory. The following species of *Cistus*: *C. albidus* (Fig. p. 83), *monspeliensis* (Fig. p. 89), *salviifolius* (Fig. p. 95), are represented here in countless numbers, and were in such profusion of bloom as I had never before seen. These plants ever delighted me anew, especially the silvery *C. albidus* with its large soft satiny pink blossoms. Here also the remarkable fiery-coloured parasite, *Cytinus Hypocistis*, which grows on the roots of the *Cistuses*, was so abundant that one could easily have gathered large bunches of it. On these islands, with their luxuriant growth, one revels in the Mediterranean vegetation and enjoys the incomparable beauty of Nature.

They are jewels on this exquisite coast. Close to the castle, on the seashore, was the *Glaucium Luteum* already in flower, that handsome horned Poppy distinguished by its glaucous foliage and large delicate lemon-yellow flowers. Not far off, spreading in every direction, was one of the Gourd family, *Ecballium Elaterium*, the "Squirting Cucumber". From its prostrate stem rise large hairy leaves and unattractive dull yellow-veined flowers which are unisexual. This plant is distributed over the Mediterranean region: its juice is strongly purgative and was prescribed by Hippocrates for this purpose. It owes its name to the extraordinary behaviour of its ripe fruits. These are cylindrical, greenish yellow, bristly, and attached to a recurved pedicel. If a ripe fruit be touched it detaches itself suddenly from its stalk and squirts its contents with great force to a distance. This phenomenon is caused by the interior tissue of the fruit becoming mucilaginous as it ripens; this at length severs the connection with the stalk. At the same time certain cell-layers of the walls being in a state of tension, exert a strong pressure on the contents and the slightest shock is sufficient to cause the separation of the fruit from the stalk and the expulsion of the seeds through the orifice thus produced. The object of this singular arrangement is the dispersal of the seeds.

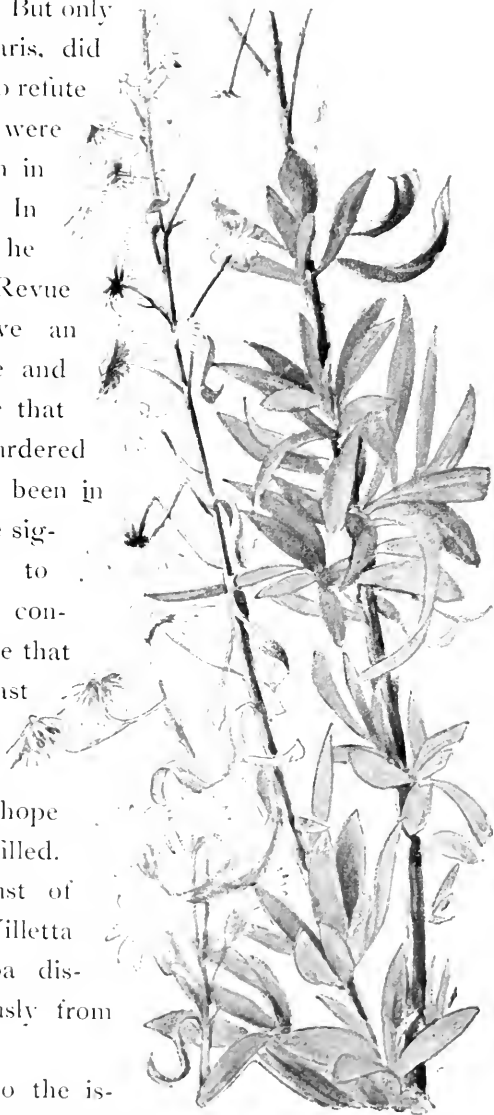
Eastward of St. Honorat lies the rocky islet of St. Féréol. Its soil is covered mainly by a rank growth of Rue, *Ruta bracteosa*. This plant reminds one very much of our garden Rue, but its smell is so unpleasant and penetrating that one rather avoids touching it.

While legend and history encircle the two Iles de Lérins as it were with a halo, an extraordinary, almost demoniacal, myth has been associated with St. Féréol. It was said — and the saying is still current — that the body of Paganini lay for a time buried on the islet of St. Féréol. I have read this statement in French works. They maintain that Paganini died of cholera at Nice in May 1840, and that his son Achille had taken the remains of his father by ship to Genoa in order to inter them in his native place. But the priesthood denied burial to the man of whom it was said that he had pledged himself to Satan; and the Municipality would not permit the landing of the body for fear of the cholera. The son then tried to accomplish his object at Marseilles but did not succeed. As he was refused at Cannes also he decided to take the coffin by night to the little uninhabited island, and there the body remained for five years. It was only in May 1845 that the son returned after having obtained permission to bury the remains of his father in the churchyard of Gajona, near Parma, not far from the villa that Paganini had owned. This tale came to my mind on seeing Paganini's violin in the magnificent Palazzo Doria Tursi, now the Palazzo Municipio at Genoa. This was during the Columbian Fête when the members of the Scientific Congress were received by the Sindaco in the rooms of the Municipio. The violin — a Guarneri — from which Paganini once drew such magic strains, is kept like a sacred relic in a costly shrine. During the Fête it had been decorated with silken ribbons in the

colours of Italy. I pondered on all this now as I looked at the little island of St. Féréol lying before me in the sea. This bright scene would not have suited the gloomy spirit of Paganini. The lonely little island would have pleased him better when the raging elements drove the foaming waves over the rocks, while the wind moaned and shrieked across the sea: when Nature played weird music on her G string, as he alone knew how to play on this string to his agitated audience. Yes, certainly, this spot amid the surging waves would be more appropriate than a peaceful churchyard for the grave of Paganini. What a pity that the story is only an invention! Paganini really died at Nice, in the Via Santa Reparata, of consumption of the throat and not of cholera. In consequence of his illness he had long before lost his voice. As he refused to receive the last sacraments the priesthood refused him Church burial, and this only took place some years after. Paganini's son, who is still living in Parma, informs me that since 1876 his father's remains have lain in the large churchyard della Villetta, after they had been carried first to Villafranca and then to Genoa — restless even in death. He, the son, had had a handsome monument erected over the grave as no suitable place could be found for it in Genoa. Most extraordinary stories were current concerning Paganini's life, and these gained credence from his singular appearance, his almost spectral attenuation and the pallor of his countenance, on which, as Heine wrote, care, genius and hell had graven their indelible marks. Paganini himself, too, contributed in no

small degree to the spread of these reports by his eccentric conduct. But only once, while in Paris, did he feel prompted to refute the stories that were printed about him in the newspapers. In a letter which he published in the "Revue Musicale" he gave an account of his life and assured the public that he had neither murdered his sweetheart nor been in prison, nor had he signed himself over to the devil. And he concluded with the hope that they would at least allow his ashes their well-earned repose. Yet this hope was not to be fulfilled. Even a marble bust of Paganini in the Villetta di Negro at Genoa disappeared mysteriously from that place.

We returned to the island of Ste. Marguerite and



Inula viscosa.

spent the time until sunset on the northern slope which is covered with *Ferula*. The fiery ball disappeared in radiance behind the Esterel mountains. On the high hills to the north-east long streaks of mist were floating; they filled the hollows of the valleys, then ascended to the snow of the Alps, turned violet and rose coloured, then disappeared, leaving no trace. Now the chain of giant peaks stood out sharp against the blue sky. Soon they, too, blushed rosy-red, then kindled to purple which gradually died away, and finally became a dead white. The last glow of daylight still lingered on the deep, its smooth surface showing those faint reflections peculiar to old Venetian mirrors: then it began to change colour and vary in tint like opal. The purple, vanishing from the hills, spread over the evening sky and soon covered the sea. Mysteriously moaning, its ruddy waves now lapped the rocky shore. The sky over the Alps assumed a pale green tint and then it became dark. Innumerable stars appeared in the heavens and countless lights flickered along the coast. We stepped into the boat again and glided away softly over the water. A fresh breeze fanned our faces, and we rejoiced to inhale the invigorating air. We hardly exchanged a word and only broke the silence when we had landed at the Croisette.

CHAPTER V.

Cannes was under the jurisdiction of the Abbots of Lerin. They had received the place from William of Gruetta, a son of Redouard, Count of Antibes. In the year 1080 Abbot Adalbert commenced the building of

that castle whose ruins still crown Mont Chevalier. The old town of Cannes rests on the slope of this hill. In the monastery of Lerin spiritual qualities were fostered above all things, hence the mildness of its rule. This influenced the manners and customs of the inhabitants on the shore, for, while on the other side of the Esterel the people were governed by rough feudal lords and their amusements consisted in mock fights -- the so called "bravadès", in Cannes, Vallauris and Antibes they had the "romérages", that is to say dances and rural sports, to enliven the "Fêtes". To this day the "bravadès" have survived at St. Tropez, and the "romérages" at Vallauris. Watch towers were erected all along the coast as a protection against the Saracens. Fire signals by night and white flags by day, on the Iles de Lérins, warned the dwellers on the coast of the approaching enemy. Cannes had a fairly peaceful existence, shielded by the monastery, which bore the brunt of the enemy's attacks, and only during the wars of Francis I with Charles V did it first sustain severe losses. In 1580 the black plague was brought to Cannes by a ship from the East, and it spread over the whole of Provence. Then came much trouble in the course of time, as when, in the seventeenth century, the Iles de Lérins fell temporarily into the power of Spain; and again, in the eighteenth century, when the Austrian and Piedmontese troops invaded Provence; but particularly at the time of the Austrian War of Succession, during the unsuccessful attacks of Austria on Provence. On the other hand a serio-comic element is not altogether wanting in the history of Cannes.

For the Archives of the town contain an account of a wild animal that in 1785 filled town and country with panic. Not a single inhabitant of the town ventured to stir abroad. At last a body of valiant men took up arms and succeeded in slaying the animal on the borders of the commune. No one had ever seen such a creature, and they did not know what to call it. A violent dispute about the skin now began between the communities of Cannes, Grasse and Mougins, on whose common boundary the animal had fallen. A serious conflict threatened, but was fortunately averted by the Marquis de Caraman, General in Command of Provence, who appropriated the skin himself. It was then certified to be the skin of a hyaena, but how the animal had strayed to Cannes remained unexplained.

By the end of the eighteenth century Cannes had sunk into a quite unimportant community. When Horace Benedict de Saussure visited it in 1787 he found only two streets, which were inhabited almost entirely by sailors and fishermen. The beauty of the spot struck him. "C'est un site vraiment délicieux", he exclaimed on the hill of St. Cassien, as his eyes wandered over the blue Golfe, the green islands, the luxuriant valley of the Siagne, Grasse and the grey limestone Alps. The Hôtels in Cannes at that time must have been very primitive, nevertheless Heinrich Schubert, Professor at Erlangen, was very comfortable in one of these houses when he came to Cannes in the year 1822. He and "Die gute Hausfrau" had been walking for eight hours over the Esterel mountains to Cannes, and arrived there on a hot after-

noon quite tired out. About this Schubert writes: — “Die gute Hausfrau has never felt better, or more cheerful, during the whole of this journey. She has been more comfortable and enjoyed her meals more at this little Inn at Cannes than anywhere else, and the charges were very moderate and therefore suited us. The little house was one of the first in the row by the sea-shore. It is true there were no marble steps leading to the upper storey, which consisted almost entirely of the one room where we dined; but there was a wooden staircase going up from the outside, and it could be mounted just as quickly as a stone one. The balcony, where we sat, outside this room, had neither iron nor bronze railings, only wooden ones, but the prospect from it of the surging sea beneath was just as extensive and lovely as from a stone one. Young chickens, hatched only a few days ago, ran about with the old hen in the dining-room and on the balcony, picking up the crumbs of white bread that the housewife strewed for them. After partaking of an excellent repast and resting ourselves, we took up our knitting and plant portfolio and, bidding farewell to our balcony with the lovely view of the sea and to our kindly reasonable hosts, sallied forth under the shady avenue of trees close to the surf on the road to Antibes”.

Cannes was indeed very different then to what it is now. It owes the commencement of its present prosperity however to an accident. In 1834 when the cholera spread over the whole of northern Europe, Italy isolated herself by means of a cordon all along her frontiers.

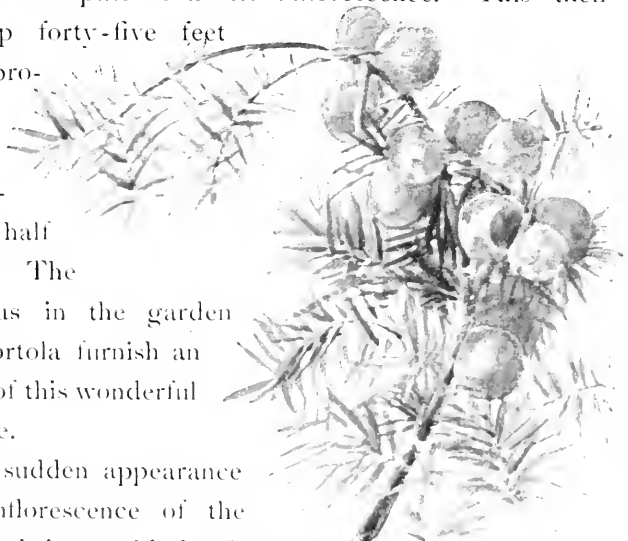
Travellers coming from France to the Italian side of the Riviera were compelled to stay several days in Cannes, which was free of infection, before they were allowed to cross the boundary at the Var. Among these travellers was Lord Brougham, who had recently resigned the office of Lord Chancellor of England, and, much depressed by the loss of his dearly-loved daughter, was hurrying to Italy. Cannes, where he was unwillingly detained, pleased him so much that he decided to remain there. He purchased some land and built a castle which he called Eléonore Louise, after his daughter. His example was followed by a great number of his country-men, and English visitors of the upper class gradually moved from Nice to Cannes. They were followed by the French aristocracy, and Cannes rapidly developed into one of the leading health resorts on the Riviera.

CHAPTER VII.

During the season in Cannes there is such an influx of wealthy strangers that it is not surprising to find the number of fashionable shops increasing each year. Near the railway crossing, in a small and most unpretentious wooden cottage, a little shop yet remains unchanged, in which a now aged man offers articles of "Aloe wood" for sale. The material which he works has really nothing to do with either Aloe or wood, but is the tough and very light tissue from the flowering stem of *Agaves*. It comes from the flower-scapes of *Agave americana* that we see in spring on the Riviera, either growing from the midst of their giant fleshy leaves, or

already brown and dead, towering like candelabra above the withering plants. In a remarkably short space of time one of these flower stems will grow from five to seven yards in height, and display its yellow sweet-scented flowers, whose number may exceed four thousand. The idea that an Agave must be a hundred years old to flower is only true in a limited sense. On the Riviera a period of from ten to fifteen years must elapse before it is able to do this. The specimens in our conservatories, on the contrary, often wait fifty years and even longer for this moment. There is a plant closely allied to the Agave, the *Fourcroya longaeza*, which according to the Mexicans flowers only once in four hundred years. It grows in the highlands of Oaxaca, in Mexico, and there attains a height of nearly sixty feet before it puts forth its inflorescence. This then shoots up forty-five feet high and produces more than a million and a half blossoms. The *Fourcroyas* in the garden of La Mortola furnish an example of this wonderful luxuriance.

The sudden appearance of the inflorescence of the Agave and its rapid development



Juniperus Oxycedrus.

after the plant had been growing so very slowly in its early stages, impressed Linnaeus so much that he gave it the name it now bears, which he intended to mean "wonderful". The first Agave reached Europe in 1561 from South America, and as early as 1583 one of these plants flowered at Pisa. It excited not a little astonishment and was described by Caesalpin. Now Agaves in full bloom are such a common sight that they are hardly noticed. It is very inaccurate to call the Agave an Aloe, for the true Aloe does not even belong to the same family of plants. The Agave, and the Fourcroya, are classed amongst the Amaryllidaceae, while the Aloe is placed in the Liliaceae.

In Mexico, when the Agave is about to flower, the central shoot is often cut out to be eaten as a dainty or as a vegetable. Or these central shoots of the Agave are roasted and then allowed to ferment in skins in order to distil a very fiery spirit called "Mescal", which is rather like Scotch Whisky. The amount of sweet tasting liquid that a vigorous Agave yields if the central shoot is cut out just at the moment when it is ready to put forth its inflorescence is remarkable. It is said to be as much as five litres daily, and that a single plant will yield about 1100 litres of liquid altogether. This fluid, after fermentation, forms "Pulque" the national beverage of the Mexicans, the flavour of which most foreigners find so nauseating. The intoxication produced by pulque is similar in many respects to that caused by opium smoking, the person under the influence of it seeking retirement in a quiet place. The

intoxication caused by mescal is different, making people mostly ill-tempered.

The inner tissue of the *Agave* inflorescence, which is turned to account in Cannes, consists of large thin-walled cells through which run vascular bundles that look like threads to the naked eye. A penholder made of this tissue weighs only two grammes. — a quality I very much appreciate.

The "Aloe wood", which the Old Testament constantly praises and mentions amongst the most costly varieties of frankincense, is not in any way related to the *Agave* nor to the true *Aloe*. It seems to have been obtained principally from *Aquillaria Agallocha*, a large tree in Further India, which, like our perfumed species of *Daphne*, belongs to the *Thymelaceae*. The agreeable odour of the wood is due to the resin of which it contains but a small quantity. In order to improve the quality of frankincense it is extracted from the wood fibres by the process of maceration. Naturally this kind of frankincense was never sold in large quantities, and in ancient times it formed a suitable gift for a prince. Thus "Aloe wood" was not lacking among the many costly presents which Catarina Cornaro, the celebrated Queen of Cyprus, received in 1476 from Kaitbai, the Sultan of Egypt. In the temples of India this incense is still burnt for ceremonial purposes. Napoleon I was so fond of this perfume, that he ordered "Aloe wood" to be burnt in his palace.

The inhabitants of the western part of Cannes are partly compensated for the excursions to La Maure by

the heights of the Croix-des-Gardes. The views are similar, but a great deal of dust must be swallowed before reaching them. The slopes of the hill, which is 490 feet high, are covered with the oldest villas of modern Cannes; there, too, lies the Château Eléonore Louise, which laid the foundation of the new health resort. You should not omit to visit the garden of the Villa La Rochefoucauld, to which strangers are always admitted. It is soon reached by the road to Fréjus. The view of the neighbouring Esterel range between the Palms and Pines of the luxuriant garden, are surprisingly effective.

I planned an excursion to the Cap d'Antibes, and rose at daybreak so as to have as much time as possible before me. When I went to the window and opened the shutters, alas! I found the sky overcast. The sun must have just risen. I stood doubtfully at the window wondering whether the sun would succeed in dispersing the clouds. Blue rifts appeared and raised joyful hopes. Soon they disappeared again and the depressing feeling came over me anew that it might remain thus sad and dreary the live-long day. Yet once more the clouds grew lighter and began to move hither and thither in heavy masses like an agitated sea. Suddenly they broke in several places, and through their gilded edges the clear sky peeped forth. It seemed almost as if there were a conflagration in the heights above, which was sending down long burning rays through the openings in the clouds to set earth and sea aflame. Now there were bright patches on the sea:

then the Iles de Lérins on the dark waves blushed in the rosy light, and the summits of the Esterel were aglow, and Old Cannes seemed ablaze. Gradually the clouds thinned, yielding to the victorious sun, then they dissolved into golden mist and vanished, and the whole sky was full of radiance.

We follow the road to Antibes, which is now illumined by the sun. This abundance of light gladdens the heart, raises new hopes, and certainly contributes much towards healing the sick who sojourn here. Such is the cheering influence of the sunlight. It is moreover a powerful antiseptic, for it destroys the germs of those lower organisms which are engendered by putrefaction and decomposition. Experiments have proved that bacteria can be completely destroyed by sunlight. If some of these be placed in the sunlight, and others kept in the shade, the former will be killed while the latter will continue to increase. In like manner intense sunlight disinfects the washing and clothing of sick people, and it also purifies lakes and rivers, provided that the water is not so heavily charged with impurities as to prevent the rays of light from penetrating. The germs also which float in the air are mostly killed by sunlight. Very true is the Italian proverb which says, "Dove non entra il sole, entra il medico". Were this saying not true, many southern countries would be filled with unendurable miasmas, and infectious diseases would incessantly devastate them. How little do they trouble in the South about disinfecting! Modern hygiene is the child of northern latitudes, and it is in those countries where the sun is so

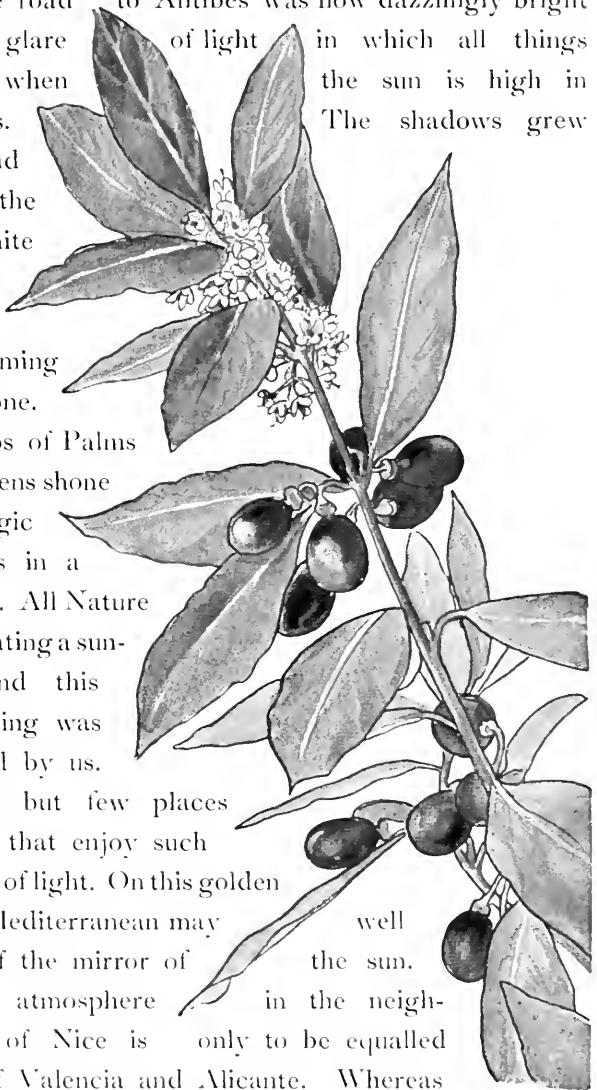
frequently shrouded in mist that the necessity for careful attention to cleanliness and comfort is most urgently felt. While we clean our rooms most carefully and disinfect everywhere, the southerner opens wide his windows and lets the sun's rays penetrate throughout the house. For this it is necessary that the sky continue clear. The germs of bacteria that are exposed to intense sunlight can only withstand its effect for a short time. Even the germs of *Bacillus anthracis*, that dangerous bacterium which produces a fatal distemper in sheep and cattle, loses its power of multiplying in a very few hours. An English botanist, Marshall Ward, conceived the idea of demonstrating this effect of light on bacteria germs by photography. He spread gelatine containing germs of bacteria on a glass plate and placed this in the sun behind a perforated sheet of tin. After a few hours he brought the glass plate into a dark warm room where it remained for some time. In all the spots on the glass plate that were behind the perforations in the tin, and which consequently the sunlight would affect, the bacteria had developed no further and were killed: but on the shaded parts they not only had not suffered, but were increasing rapidly and marked the gelatine accordingly. Thus it was that the pattern of the perforations was distinctly recognised on the gelatine. Positive prints can be obtained by means of bacteria even from ordinary photographic negatives, provided the experiment be performed with particularly sensitive germs. Purple bacteria from the Thames, when placed behind glass negatives, have produced pictures of English landscapes which

were quite recognisable, though not sharply defined. — The whole road to Antibes was now dazzlingly bright with that glare of light in which all things are steeped when the sun is high in the heavens. The shadows grew

shorter and darker on the chalky - white road, the half shadows becoming bluer in tone.

The groups of Palms in the gardens shone like the magic decorations in a fairy scene. All Nature was celebrating a sun-festival and this happy feeling was also shared by us.

There are but few places in Europe that enjoy such abundance of light. On this golden coast the Mediterranean may well boast itself the mirror of the sun. The clear atmosphere in the neighbourhood of Nice is only to be equalled by that of Valencia and Alicante. Whereas in Paris the view from the Eiffel tower extends,



Laurus nobilis.

under the most favourable conditions, only a hundred kilometres, here, strange to say, the jagged summits of Corsica, distant more than two hundred kilometres, may frequently be seen. For this reason Mont Gros, near Nice, was rightly chosen as the site of an astronomical observatory. In Nice there are on an average only sixty-seven rainy days in the course of the year. The rain does not last long, but is frequently as heavy as in the tropics. This spring, during our five weeks' stay, from the middle of March to the latter half of April, we had only three days of continuous rain to record. In fact during the whole time we were bathed in light.

The road led us past Golfe Jouan to Jouan les Pins, and now we followed the wide curve of the bay under Pine trees. Our gaze rested either on the Esterel mountains or on the Iles de Lérins, or lost itself on the trackless sea. These views were the same familiar ones that had grown so dear, but always in new settings. We reached the Cap and walked into the gardens of the Hôtel du Cap. Little is altered here, the same luxuriant vegetation and the same fragrant scent of the Maquis. But some curious buildings on the extreme point of the tongue of land appear strange to us. Can the Saracens again have conquered the land and settled on the Cap, for those are certainly Moorish buildings that rise to view? A Mosque raises its slender minaret aloft. The point of the Cap is separated from the Hôtel by a wall, which fortunately is broken through, and nothing hinders us from proceeding further.

It was not a Saracen but a Parisian who had these buildings erected. He died before his work was completed, and his wish to be buried here was not fulfilled as the French Government prohibited the interment at the Cap.

So these oriental buildings will in the course of time disappear — perhaps crumble into ruins which some day may be pointed out as Saracen! But the fishermen, from whom the shore is being filched away piece by piece, are again taking possession of the point of the Cap, and with undisguised satisfaction have destroyed the wall that barred their way to the rocks, where from their childhood they had been accustomed to fish. And the visitor to the Cap d'Antibes can again ramble unhindered among these rugged rocks and listen to the mysterious murmuring of the waves in their cracks and fissures.

CHAPTER VIII.

A few days later we quitted Cannes and took up our abode at Cap Martin. Some time ago an English company acquired this whole promontory and built an hotel here which is one of the most comfortable on the Riviera. It is to be regretted that the most beautiful spots on this coast have been sacrificed to the speculator, but fortunately one does not feel this with regard to Cap Martin. For the English company have wisely preserved its original character, and with much taste and ingenuity turned the fine wood of Aleppo Pines which cover it into a still finer English park. They have spared every

single tree and left the Maquis on the western shore in its primitive condition, only putting in foreign plants discreetly. The Hôtel stands on the high ground at the southern end of the Cap, but is still enclosed by the woods, of which only as much has been removed as was absolutely necessary for the building of the house. The land, too, on the Cap is only sold under conditions which bind the new tenants to protect the woods. The newly built villas in the woods are scarcely visible, and it is only by climbing the heights commanding the Cap that they can be seen. From the Hôtel the paths that encircle the whole Cap can be followed without hindrance. The main road leading to Mentone runs along the eastern shore. It is dusty and on this account to be avoided as much as possible by pedestrians. This is easily done by turning into the roads that run through the wood along the ridge of the Cap. But the foot-path along the western side of the Cap is most attractive and quite free from dust. It skirts the shore through long stretches of Pine trees and aromatic bushes. This walk is so charming and affords such a variety of views, that one never tires of it. The path leads up and down over broken masses of rock, always in close proximity to the sea. It is bordered by Myrtle, Pistachia (Fig. p. 349) and Rosemary (Fig. p. 371). There, too, the evergreen Buckthorn (*Rhamnus Alaternus*, Fig. p. 367), with its dark berries, grows in abundance. Besides these there was the interesting *Cnicorum Tricoctum*, (Fig. p. 107), with small yellow flowers, which we had seen growing in the Maquis at Antibes; and the strong-smelling Rue, that has

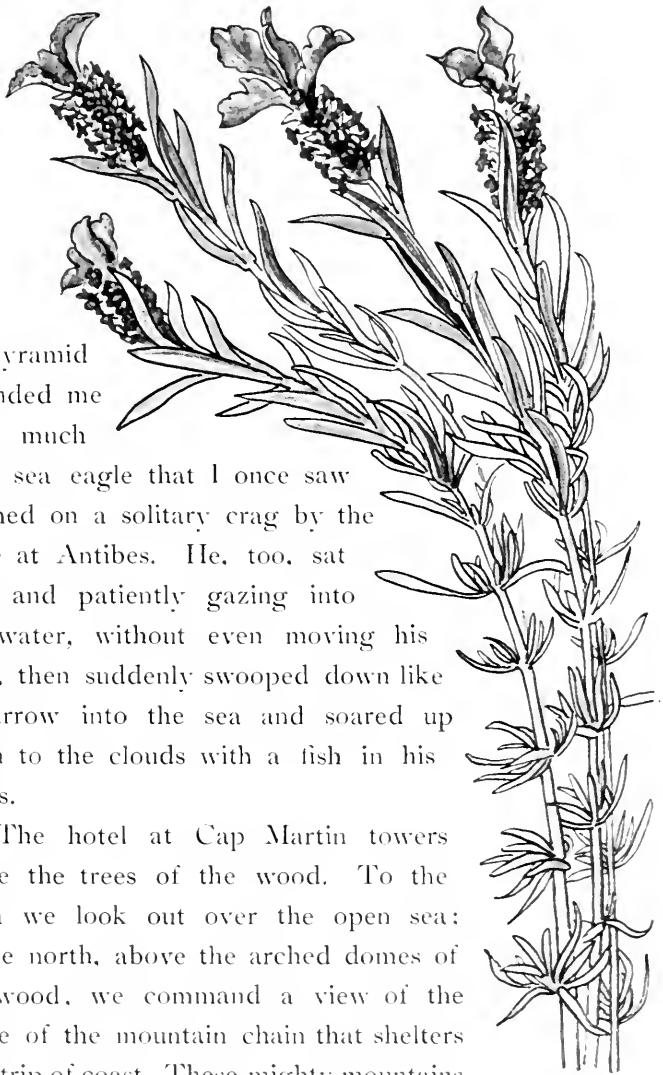
already unfolded its umbels of yellowish-green flowers. At every turn rocks of different shapes jut forth from the sea in endless variety; their sides are brown and their tops powdered, as it were, with white. Pine trees cling to them, bending inquisitively over the water, seeming to watch the ever-changing play of the waves. Everywhere the silver-crested breakers, here deep blue, there bright green, and yonder of a violet tint. Now fishing boats scurry past, brilliantly illuminated by the sunshine, their oars appearing to dip into molten metal which falls from them in glittering drops. Extensive views of the coast open out: Monte Carlo sloping up gently from the sea, then Monaco on its steep rock, and above them, as though on guard, the giant "Tête de Chien". Close by, clinging to the mountain side like a nest, is Roccabruna, surrounded by Orange groves and set amidst Cypress and Carob trees.

The aspect and moods of the Cap change hourly. In the early morning, when the sun is still in the east, it is pleasant to stroll here in the shade of the trees and of the steep banks. We wander up and down the rocks, now close to the beach, now high above the sea, then again down to the shore where the waves roll up to our feet. But before long we have to change our ground, for the Cap does not point due south but south-east, so that the sun's rays soon strike the western slope. Then there is welcome shade on the eastern shore. Between the dusty road and the sea is a rocky strip overgrown with Pines where it is possible to rest free from dust. Here also the shore is deeply fissured

and forms a varied foreground to the scene which is disclosed to view on the opposite side of the bay. The Pines bend over the rocks and stretch their branches towards the sea, thus encircling Mentone and the high peaks above it, or La Mortola, or again Bordighera with their green foliage. We used to sit for hours on these rocks, book in hand, often looking up from its pages away over the blue water. Sometimes the fishermen attracted our attention; they were watching for fish near by. One of them sat above the rocks on a stand made of three stakes bound together, and gazed intently into the water; others waited in a boat ready to draw in the nets at a given signal. These were fastened to an empty boat placed cross-ways thus forming a triangle that was open on one side. As soon as the fisherman on the look out above perceived that the fish had entered the triangle, he pulled a rope so that the net closed across the open end. The boat then sped swiftly to the shore and cut off all means of retreat for the fish; the nets were then drawn in, capturing a few small fishes. Sometimes only one struggling creature was brought to land. The patience of these men astonished us. They would sit for hours in the boat without stirring. The live-long day the watcher would remain perched on his pyramid of stakes, and apparently the time did not hang heavy on his hands. What a contrast to people like ourselves, who live in a whirl of continual activity and excitement, leaving no moment unemployed, and at last compelled to come hither to rest our jaded nerves! The man on

his pyramid reminded me very much of a sea eagle that I once saw perched on a solitary crag by the shore at Antibes. He, too, sat long and patiently gazing into the water, without even moving his head, then suddenly swooped down like an arrow into the sea and soared up again to the clouds with a fish in his talons.

The hotel at Cap Martin towers above the trees of the wood. To the south we look out over the open sea; to the north, above the arched domes of the wood, we command a view of the whole of the mountain chain that shelters this strip of coast. These mighty mountains are ranged in line from Mt. Agel in the west to the Bercean in the east. The loftiest limestone giants are in the middle, piercing the blue sky with



*Lavandula
Stoechas.*

their sharp crests. We gazed at them every evening when the sinking sun tinged their summits with pink, till peak after peak gradually faded. And often towards evening we would descend to the eastern shore to see the coast lighted up. When Mentone is already buried in deep shadow Old Bordighera is still aflame with purple light — a favourite of the sun on this golden coast it receives his last greeting at eventide.

After night-fall we would again go down to the shore to see the lights of Mentone and Monte Carlo. Monte Carlo, in particular, looks quite fairy-like; thousands of lights are crowded together round the foot of the mountain which stands out darkly against the starry sky. I used often to contemplate this view and feel as if I had seen it before in the past. But where and when? I could not remember. Then suddenly I saw it again vividly before me — the old picture just as I had looked on it with childish eyes. It was a coloured picture of Naples in a little panorama given me once on Christmas Eve. When held against a light, innumerable little flames lit up Naples and excited my childish fancy; these were produced by pinpricks perforating the picture. As in that view Camaldoli commands Naples so does the Tête de Chien tower above Monte Carlo; and as the lights shone from Posilipo, so did they also here on the rocks of Monaco. How wonderfully strong these childish impressions are! What has not this harried brain had to take in since then! And yet the old impression was not effaced, but

only dormant, and revived again when a touch from outside brought it back to consciousness.

The spot where Cap Martin joins the coast is covered with beautiful old Olive trees. There they stand with their fantastically gnarled stems, of which no two are alike. On this coast the farther you get from the Esterel the larger and finer they become. What a difference between the miserable trees at the mouth of the Rhone and these giants raising their crowns proudly aloft! We must see them thus to value and love them; and the abundance of light in this sunny district is also necessary that their foliage may not appear grey and sad but silvery and bright. This is why the Olive grove forms so characteristic an element in this landscape. The leaves of the tree are not large, and as its foliage never grows dense a soft twilight of peculiar charm reigns in the Olive groves. Every breath of wind stirs their leaves, and the lights tremble on the trees and flicker like fireflies over the ground, animating the solitude.

In spite of its apparently exposed situation Cap Martin is well sheltered from the Mistral and from the north wind and lies open only to the south and east. The severity of last winter has proved that the high mountains to the north and west of the Cap form a most effective barrier against the cold. Scarcely any snow lay on the Cap when Mentone was covered, and neither the Bougainvillias nor the Heliotropes at the Hôtel suffered. Plants are the surest indicators of climate. In most places on the Riviera last winter the Bougainvillias and Helio-

tropes were frozen, or lost their foliage. The size of the Bush Spurge (*Euphorbia dendroides*) growing all over the western slope of Cap Martin proves how favourable are the climatic conditions. Only in the south of Sardinia can larger specimens be found. The luxuriant Lemon groves close by in Mentone bear witness to the mildness of the climate in this region. The Lemon cannot endure a temperature lower than -5°C . Its fruits freeze at -3°C . Imagine the agitation of the people last winter when the thermometer repeatedly sank below zero. The owner of a large Lemon plantation told me that in the cold nights he had stood for hours watching the thermometer, in great anxiety lest the mercury should fall still lower. Half a degree more and the whole year's crop would be lost; indeed in many places in Mentone last winter the lemons were frozen but fortunately not the trees. This occurred chiefly at the entrances to the valleys where there is insufficient shelter from the north. Lemon trees should never be planted in such spots: but after many mild winters in succession people become forgetful and take no precautions. As a rule the cold north winds do not touch the coast, but reach the sea a few kilometres from it, and it often happens that the sea out there is quite stormy while perfect calm reigns on the coast. At Mentone the Orange trees, too, have stood this winter very well. With a cloudy sky the fruit will stand -4°C and the cold must remain at -6°C for some time to kill the tree. This is the reason why Orange trees, but not Lemons, are to be seen at Cannes: even at Golfe Jouan the foliage of the former was partly frozen. The

Carob, too, is exceedingly sensitive to a low temperature as is proved by its finer development in a warmer climate. No larger and more luxuriant specimens can be found anywhere on the Riviera than on the stretch of coast between Villefranche and San Remo.

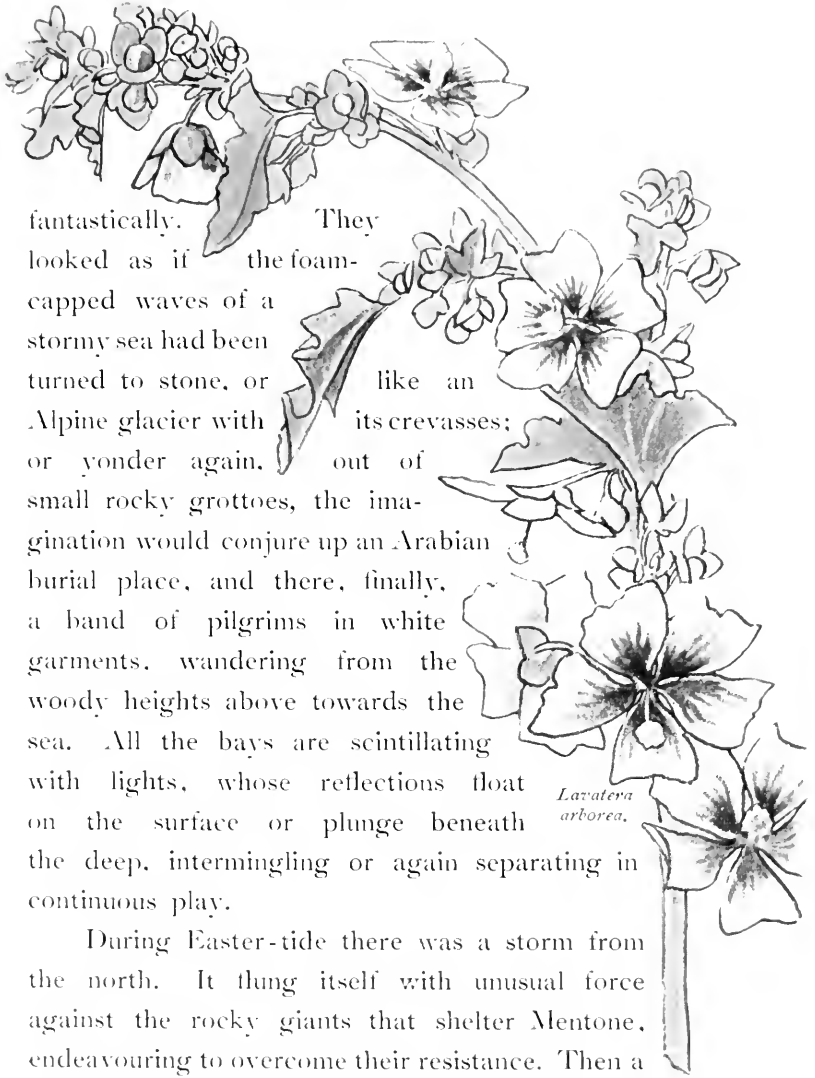
To strangers it appears remarkable when, towards spring, the usually hot and dry Sirocco on the Ponente is accompanied by snow. This seldom happens unless the high mountains of Corsica are heavily laden with snow. It is not, however, real snow that falls then but sleet, which is here called "neige de Corse".

Scarcely any deciduous trees are to be seen along the tract of land from Villefranche to San Remo. We are therefore less forcibly reminded of winter here than further south — even at Naples. There the Fig and Vine predominate and Posilipo in March appeared to us almost barer than the Rhine valley which we had recently left. The nights were bright with moonlight now, and the mountains shone with a magic glamour; they formed a grand amphitheatre, and their serrated summits showed like fine lace-work against the sky, while deep down below twinkled the lights of Mentone.

This full moon was to usher in Easter. In the evening we went down to the shore to watch it rise. All was dark on the rocks and sea, and solitude and silence reigned supreme. The wide sea lay slumbering before us. Above us stretched the vast dome of heaven, almost black, but sprinkled with untold stars that were reflected from the surface of the deep in silvery streaks. Nature seemed in a state of tension, as though awaiting an event about

to happen; it was so still and solemn everywhere, not even a blade of grass trembled. The Pines hung over the waters as if listening for some distant sound. The balmy fragrance of the Maquis spread softly to the sea, offering sweet incense. It may have been that our souls only were full of expectation and that we imbued the whole wide world with this feeling.

Suddenly a red streak rose in the east above the water. It increased in breadth and soon cast the first bright beam over the black flood as if to caress it. The waters seemed to thrill under this ray and then rocked it softly on their broad bosom. At last the moon emerged entirely from the sea; her countenance was flushed like one refreshed from sleep. Distorted at first and somewhat strange, her disc soon became round and silvery and she shed her full beams over the wavelets of the sea. The stars paled as she rose higher; only the largest of them could still look her in the face, the others were lost in the depths of the heavens. Where the wavelets lapped the rocks of the strand it sparkled and glittered as if all the myriad stars that had disappeared from the heavens had cast themselves into the deep. A broad river of silver flowed from the shore to the distant horizon, broken here and there by smooth streaks which changed colours like an opal. Dusky barques passing by dipped into this stream of moonlight — dark silhouettes on a silver ground. The moon rose higher and higher above the water and continued her triumphant course in a wide curve through the sky. Her light soon began to penetrate the deepest recesses of the shore and to illuminate the fissured rocks

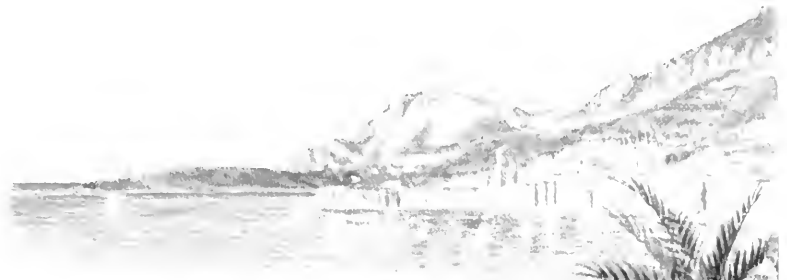
*Lavatera
arborea.*

fantastically. They looked as if the foam-capped waves of a stormy sea had been turned to stone, or like an Alpine glacier with its crevasses; or yonder again, out of small rocky grottoes, the imagination would conjure up an Arabian burial place, and there, finally, a band of pilgrims in white garments, wandering from the woody heights above towards the sea. All the bays are scintillating with lights, whose reflections float on the surface or plunge beneath the deep, intermingling or again separating in continuous play.

During Easter-tide there was a storm from the north. It flung itself with unusual force against the rocky giants that shelter Mentone, endeavouring to overcome their resistance. Then a mighty struggle arose between these Titans and the unfettered elements. The winds hissed and howled and we saw rough winter raging overhead while we

were still in the midst of gentle spring. The north wind flung snow at the heads of the rocky giants and at times they almost seemed to be giving way. A cold current of air passed over the Cap. The Aleppo Pines shook their heads gravely and the waves of the sea with foaming manes fled terrified from the land. Long into the night the headland heaved and trembled. Then all was still. Soon the stars shone forth and the next morning the giant peaks above Mentone, now clothed in snow and radiant in the golden sunshine, proudly raised their rocky heads conscious of victory.

But unfortunately this sunshine was not to last; the balance of the atmosphere was disturbed. An east wind soon set in with bad weather. This made it easier for us to leave the Riviera. Heavy rain-drops moistened the parched earth, and we left under the fond delusion that this sky, so dear to us, was weeping tears at our departure.



FOURTH JOURNEY.

CHAPTER I.

Nature had decked herself with greater luxuriance than usual on the Riviera this spring. From a distance the gardens looked like gigantic posies, and many of the houses were completely hidden under masses of Bougainvillia, Heliotrope and Roses. We drove from Ventimiglia to Mentone: it was like passing under triumphal arches, and as if the roads had been decorated with garlands of flowers in our honour. Roses of all colours covered the hedges, clambering to the tops of the trees to unfold in fuller splendour and hanging down

in wavy festoons which were stirred by every breath of air. Yet I had never before felt so sad in the midst of such a profusion of gay flowers, and when we reached the Pont St. Louis and saw the fairy-like picture of Mentone outlined against the blue sky, my eyes turned to the ruined Castle of the Grimaldis above the town, — the cemetery, where under gay Roses the dead are at rest. I was accompanying an invalid, who was dangerously ill, to Mentone, and looked forward to the near future with apprehension and sorrow. Therefore I sought to distract my thoughts from the sad train which they were apt to follow, by occupying myself as much as possible with scientific work. The sublime scenes by which I was surrounded had a soothing effect on me as has always been the case. In contemplating the trackless sea and the sky-capped mountains a ray of the bright Riviera sunshine would now and then, for a few moments, penetrate to my inmost heart.

The Maquis has in a great measure disappeared from Mentone, but it is still to be found in limited patches, nor need we go far in order to reach it. It is best represented on the ridge which is crowned by the old convent of the Annonciade. But the view from this spot does not attract me: I prefer the ridge on which picturesque old Castellar rises. Leaving the main street of Mentone near the Place Nationale we turn into the Rue de Castellar, cross the railway by a bridge and begin the steep ascent. The first plant we notice here, as elsewhere, is the honey-scented *Allyssum maritimum* growing on the walls. Unassumingly it unfolds its thick

clusters of flowers all through the winter. The yellow anthers protrude from the little white blossoms, which have four crossed petals. At first they are seen against a bright green ground, but this, as well as the stamens, becomes brownish red later so that the older flowers show a dark centre. The path continues over bare rocks, but soon we are surrounded by *Lavender* (Fig. p. 257), *Cistus* (Fig. p. 83), *Tree Heath* (Fig. p. 175), *Rhamnus* (Fig. p. 367), and *Phillyrea* (Fig. p. 343), and before long come across one or other of those beautiful orchids in which the country round Mentone is so rich. Here also is a species of Spurge-Laurel, *Daphne Gnidium* (Fig. p. 163), a bright green bush, striking on account of its almost vertical branches which are covered the whole of their length with erect linear leaves. In spring this bush is only seen in leaf, for the sweet-scented flowers do not appear till summer. The elegant *Selaginella denticulata* clings to the dark ground on the banks of the roads. We grow this little bright green plant in our conservatories at home to cover rock-work or level spots, as with a green sward. It is a cryptogam, the spores of which are enclosed in cases borne on spicate shoots which grow in the axils of the scale-like leaves.

The path soon leads into a Pine wood, then through an Olive grove, continually revealing new aspects of that noble mountain panorama which makes Mentone one of the most glorious spots on the Riviera. The visitor to Mentone should begin his rambles with this excursion; it will introduce him at once to the full splendour of this landscape.

I never fail to walk up the valley of Gorbio as far as the western ridge whence the descent can be made to Roccabruna. Half way to Gorbio a road branches off leading out of the valley up to the new Sanatorium for Consumptives which lies in a very sheltered situation on a wooded slope 825 feet high. The great white building is conspicuous from a distance. It was only finished in 1900 and every care was taken to fit it up with all the latest modern hygienic appliances. May it be successful in prolonging the lives of many and perhaps in completely curing some! The shattered cross that used to stand on the slope above Gorbio has been replaced by a stone one, the civilisation of the coast reaching even to these heights. Unfortunately one can no longer enjoy the peaceful quiet and the glorious views here without being disturbed by shooting which makes the mountains re-echo. If you walk on farther you may be suddenly stopped by warning cries, and have to wait until the road is declared clear again. A shooting range has been made up here on the ridge for the *Chasseurs Alpins* who are garrisoned at Cap Martin, and it bars the way. Fortunately target practice does not take place every day so that one can frequently enjoy, unmolested, the endless views of the coast from the ridge, and yield to the powerful impressions which they create. However often we may look on this scene it ever surprises and delights us anew; for it is of surpassing beauty and too vast for the memory to retain it all. But we are always fascinated by that mighty pointed rock that rises so majestically from the midst of its companions near Mentone.

and that bears on its steep summit the village of St. Agnese: for a wilder, more romantic and fantastic picture could hardly be seen anywhere.

CHAPTER II.

Recent publications containing new discoveries and facts about the singular habit of the Fig-tree induced me to turn my attention to it more closely. It was just sprouting, and bore on its twigs the young fruits which had been on the tree all winter.

The cultivation of the Fig-tree dates so far back that in this respect it may rank with the Olive and the Vine.

In the poetical and metaphorical language of the ancients the Fig-tree was called the "brother of the Vine". Formerly Attica boasted that, next to Sikyon, she produced the best figs. In Greece wine and figs were common necessities of life for both poor and rich, and an Attic idler would be quite content to loiter through the day, lying in the sun or shade according to the season of the year, if he had a few dried figs. *Ficus Ruminalis*, the tree under which Romulus and Remus were suckled by the she-wolf, shows how ancient was the tradition of the Fig-tree on Italian soil. According to Count zu Solms-Laubach's researches, the Italian Fig-tree was not introduced from Greece, nor can its cultivation in Greece and Rome have had the same origin. Palaeontological discoveries prove that *Ficus Carica*, the primitive plant from which the cultivated species are derived, was widely spread in the Quaternary epoch

over the western part of the Mediterranean region. It also seems probable that this plant migrated from the East across the Mediterranean. But this happened in prehistoric times before it had begun to be cultivated.

The earliest description of the Fig-tree mentions two distinct varieties; the one yielding edible figs, the other unpalatable fruits. Even in ancient times the tree with the uneatable fruits was called "Caprificus", which means Goat-fig or Buck-fig; and the singular influence which the Caprifig exerts over the ripening of the edible figs was already known. Pliny writes: — "They call the wild Fig-tree Caprificus: its fruits never ripen, but it imparts to other fruits that which it itself lacks: for Nature distributes the creative powers at her discretion, and she is able to engender new forms of life even out of corruption itself. Thus the wild Fig-tree produces flies which leave the decaying fruits of the maternal tree, as these can afford them no more nourishment. These flies then attack the cultivated tree, bite open its fruits greedily and force their way into their interior, thus admitting as much warmth and sunlight into the figs as is necessary to ripen them".

Herodotus appears also to have known of this "capriflication". Aristotle described it fully, and yet only recent investigations have been able to make clear his meaning. Indeed, the true connection of the Caprifig with the edible figs has only quite lately been discovered.

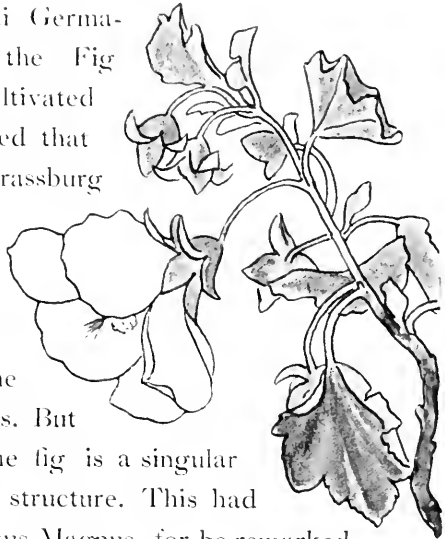
Even the northerner is familiar with the aspect of the Fig-tree, for we often grow it in tubs, if not in the open ground. Thus centuries ago — in 1561 — Conrad

Gesner, in his "Horti Germaniae", enumerated the Fig among the plants cultivated in Germany, and added that in the garden at Strassburg it bore ripe figs in its second year.

Figs are commonly supposed to be single fruits and the grains inside them seeds. But as a matter of fact the fig is a singular and very complicated structure. This had been noticed by Albertus Magnus, for he remarked that the Fig-tree produced figs without flowering. The fig is really an infructescence, while the "seeds" represent the true fruits. The tasty pulp of the fig consists of the succulent receptacle on which the fruits grow. The fig is therefore a curiously adapted inflorescence, which, instead of displaying its flowers on twigs, develops into an unbranched structure closed

at its apex like an urn and producing flowers on its inner surface. —

The Caprifig generally bears three crops of fruit a year, the edible Fig only two. This circumstance is also recorded by the ancients. The



Lavatera maritima.

fruits of the Caprifig produced in October generally ripen in April. Then the second crop begins, and ends in June or July; then the third which lasts all through the summer. All these Caprifigs bear carpellary flowers in their inner cavity; but these are singularly modified, for they possess only undeveloped carpels which are not adapted either for pollination or fructification, but for forming galls. In most Caprifigs there are, at the upper end of the cavity close under the aperture, normal pollen-forming staminate flowers. These are never missing in those fruits which ripen in June and July, and it is these which are generally called "Profichi" in Italy. But all three crops of fruit are uneatable, and, even when ripe, are milky tough and contain no sugar. They are inhabited by a kind of wasp, *Blastophaga grossorum*. These get into the Caprifig through the aperture, seek out the imperfect carpellary flowers, and lay an egg in each. A white larva is hatched from the egg, while the carpel itself swells up into a gall. In this gall the larva pupates and then the fully developed wasp bites a hole in the gall and sets itself free. The males come out first, and the females, when fertilised, make their way to the orifice to leave the fig. At the same time the staminate flowers shed their pollen and the wasps are dusted with it as they push through. It occasionally happens that a Caprifig will produce normal carpellary flowers which bear fertile seeds. But this is not the true function of the Caprifig, whose object is to provide accomodation and maintenance for the Blastophagae. The normal carpellary flowers are produced by the true Fig-tree, the one that bears the edible figs. Most of

the varieties of Fig at present under cultivation in Italy produce perfect carpellary flowers only in the summer crop, for in the winter crop these are arrested. All these varieties of Fig no longer require pollination, and this explains their habit. But where, on the contrary, fertilisation is indispensable, as is the case with the Smyrna Fig, the carpellary flowers are produced in all crops ready for pollination. This, however, can only be performed by the Blastophagae which, laden with pollen from the Caprifig, creep into the cavity of the fig on the cultivated tree and dust the stigmas of the carpellary flowers. The wasp itself derives no benefit from this service as it cannot pierce the ovary of a normal carpellary flower with its ovipositor. It finally lays an egg between the carpellary flowers, but this comes to nothing. Thus the instinct of the wasp has been deceived from time immemorial. The close resemblance of the carpellary fig to the Caprifig has misled them. Moreover the cultivated Fig-tree in some measure treats the deluded wasps gently and permits most of them to escape. Some tropical Figs act differently, for the wasps that have forced their way into their carpellary figs have to lose their lives.

It may be asked, how is it possible for such a contrivance to continue in Nature? The answer is easily given. Without the sacrifice of these wasps, which unwittingly perform the necessary pollination of the carpellary flowers, this species of wasp would become extinct, for its very existence is bound up with that of the tree. Failing pollination, which nor-

mally results in the formation of seeds necessary for the preservation of the species, this Fig would have to disappear. Thus a certain number of Blastophagae are constantly sacrificed for the advantage of the whole species — one of the many instances showing how little regard Nature has for the life of the individual. The duration of its existence is subordinate to the common interest of the species.

In plants long cultivated the continued interference of man has not unfrequently displaced the original contrivances that served for the preservation of the species. This is so with several varieties of our Fig-trees. Man has in these cases undertaken the propagation of these plants which are useful to him: he maintains them by grafting and cuttings so that the formation of seeds has become altogether superfluous. This is the reason why most of the varieties of Fig cultivated in Italy, and also on the French Riviera, no longer require caprification. Their infructescence ripens without pollination and consequently they produce no germinating seeds. The Greek and Turkish fig, and especially those of Smyrna, are quite different in habit. These are pollinated by Blastophagae and their fruits contain seeds from which new plants can be raised. It is not without good reason, therefore, that in Asia Minor Caprifigs are hung among the boughs of the cultivated Fig-trees: for the wasps which escape from these are necessary. In figs, like those of Smyrna, which are always eaten dried, the nutty flavour due to the seeds is much prized. In the cultivation of this variety of

Fig, fertilisation has not been done away with, and it has been much to their advantage to retain it.

This was found by experience to hold good when the experiment was tried of introducing the cultivation of the Smyrna Fig into America. Many thousands of trees were planted in California without producing a single fruit during the first nineteen years. All the young figs fell off. Results were only obtained by artificial pollination effected by hand. This led to the introduction of the Caprifig and the Blastophaga, and since then Smyrna Figs have been yielding rich harvests in America.

The careful study of all these facts, and further investigations of Tropical species of Fig, have resulted in the discovery that the Caprifig and the cultivated Fig belong to the same species, that is *Ficus Carica*, and that in reality the Caprifig is the staminate, and the cultivated Fig the carpellary plant; thus we are dealing with a dioecious plant.

Even in ancient times the varieties of figs were so numerous and continually increasing that Pliny wondered whether this plant would not alter with time. There were already white and black figs; and next after the Attic figs those from the neighbourhood of Smyrna were considered the best. They came originally from the province of Caria which included those districts whence the Smyrna figs are now brought to us. This is why Linnaeus called the Fig-tree Carian, *Ficus Carica*. In ancient times Carian figs were brought to Italy just as they are now, dried and packed in boxes.

A botanist of Nice, Dr. Sauvaigo, has recently made a list of the varieties of Fig that are cultivated in the neighbourhood of Nice. He found that there were sixteen; amongst these were white, green, grey, red, black and brown fruits. Of them the "Barnissotte blanche", called in Genoa "Brogiotto bianco", is preferred on account of its fine flavour. The Genoese are said to have introduced them from Syria at the time of the Crusades. Near Nice there were trees of the "Barnissotte" that were over thirty feet high. The Scuderi property at Rimiez boasts of one thirty-six feet high, with a trunk four feet in diameter, and with a spread of forty-five feet. Of the French figs the "Rolandine" is said to be the best suited for drying, and lastly the longish "Bellone", with very sweet red pulp, is prized as Queen of all figs between Toulon and St. Remo.

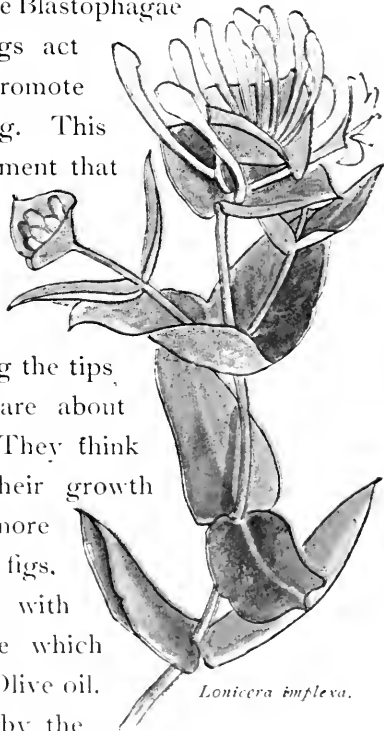
Figs are a wholesome food, though no longer so much valued as in ancient days. In Athens they formed so important an element in the food of the people that during bad harvests their exportation was prohibited to prevent famine. Hence the appointment of officials called "Sycophants", — Fig informers. These gave information of any infringement of the law, and often used their office as a means of extortion; hence their name came to be identical with informer.

Figs are about three times as nourishing as bread; this explains their former importance as well as their present value in many districts. In North Africa half the meals of the Kabyles consist only of dried figs; more-

over large loaves and compressed cakes are made of this fruit and sent into the interior of the Sahara. In the neighbourhood of Nice wine is made of figs, and the natives consider it sweet and palatable.

It is remarkable that in some districts they still continue to hang up Caprifigs between the branches of such varieties of Fig as have been proved to no longer require pollination to ripen their fruits. This practice has frequently been referred to to show how tenacious are old customs. At the same time this must not be regarded as an entirely useless proceeding. It seems that even when pollination by the *Blastophagae*

is not necessary their stings act as an irritant and thus promote the development of the fig. This would agree with the statement that corresponding effects have also been obtained by similar irritants. Thus many owners of gardens in Nice are in the habit of pricking the tips of young figs when they are about the size of the thumb. They think that this will increase their growth and cause them to ripen more quickly. Others prick the figs, shortly before they ripen, with a straw or wooden spike which they dip first in the finest Olive oil.



Lonicera implexa.

This is corroborated by the

observations recently made by Mr. Treub, the highly esteemed Director of the Botanic Gardens in Buitenzorg, Java, on *Ficus Hirta* a species of Fig growing there. The infructescence of this species is not pollinated, but in spite of this it develops germinating seeds. Hence it is apparent that this is due to parthenogenesis, that is to say the ovules possess the faculty of developing and germinating without fertilisation. Parthenogenesis has for some time been known to exist in different parts of the Animal World, particularly among insects. And it has also been proved to exist in a few of the lower plants. But until quite recently it was considered not to exist among more highly organised plants. Now, however, several well authenticated instances have been brought to light, as in the case of *Ficus Hirta*. Nevertheless a fig-wasp, probably the *Blastophaga Javana*, is necessary for the development of the fruits of this species. Laden with pollen the insects penetrate to the cavity of the carpellary figs of *Ficus Hirta*. They force their way through the opening with such difficulty that they lose both wings and antennae. Sometimes they do not succeed in reaching the interior of the fig, and perish among the small scales that bar the entrance. When inside the fig they attempt to lay their eggs in the carpels. Finding this impossible they try to get back. The minute pollen grains remain on the stigmas of the flowers and even germinate, but without result since the passage to the ovules is undeveloped. But the irritation of the Blastophagae, and particularly their attempts to prick the carpel, results in the production of seed and the ripening of the fig.

It is curious that at Nice they manure Fig-trees with very similar substances to those with which they manure the Olives at Bordighera. They consider that those substances are the best which decay slowly in the ground. Pounded bones, paper cuttings, road sweepings, horn parings, woollen rags, pieces of leather and even the rubbish from old houses may frequently be seen buried at the foot of Fig-trees.

Here and there wild Fig-trees are met with on the Riviera. These are found even as far north as Bozen. Who can say whether in remote places some of these trees may not be really wild? They generally grow out from clefts in the rock and spread their foliage gracefully over the cliff. In early spring they are still leafless and stretch forth their crooked clumsy branches fantastically, like weird arms about to capture their prey.

Besides the Smyrna Fig the best varieties of Date Palm have been lately introduced into the United States. The U. S. Department of Agriculture in Washington devotes special attention to work of this kind, and men appointed as "Assistants" in the "Division of Vegetable Physiology and Pathology", or as "Agricultural Explorers" in the "Bureau of Plant Industry", are entrusted with the carrying out of these experiments. These are scientifically trained botanists, who have first mastered the theoretical part of the subject and still keep up these studies side by side with their practical work. Two of the "Assistants" now usefully employed by the U. S. Department of Agriculture studied botany at Bonn, and I have the highest opinion of the indom-

itable industry and perseverance, the intelligence and patience of these young scholars. One of these is Walter T. Swingle, who has since been successful in overcoming the obstacles which had hitherto prevented the satisfactory development of the Smyrna Fig in the United States, and who has also made it possible to ensure permanent results with the Date Palm. These results have been obtained only by the most careful study of the conditions of life of these plants in their former habitat. Soil, climate, method of cultivation and means of pollination were all the subjects of enquiry and brought valuable scientific facts to light. The best scions of the Date Palm were obtained from the Sahara, and as the State of Arizona presented the necessary climatic conditions the results were successful. Very soon then American dates will enter into competition with those of the old world, as American lemons, oranges, grapes, and all kinds of stone fruit have already done. The Date Palm succeeds so well in Arizona that it begins to bear fruit in fifteen years. May the capital of this State indeed prove worthy of her name "Phoenix"!

CHAPTER III.

Those who are accustomed to observe the plants surrounding them will not fail to notice the *Arisarum vulgare* (Fig. p. 41), an Arum which is very common in Mentone and all along the Riviera in the outskirts of gardens and on any ground that has once been cultivated. The curious dark brown inflorescences rise from among

the dark green arrow-shaped leaves. They consist of a club-shaped spadix bearing small inconspicuous flowers, and a dark-brown spathe, striped with white, which envelops the spadix. This spathe is not a floral envelope but a bract. It forms a tube terminating in a flap which curves over like a helmet. The bare end of the spadix is also brown and protrudes from the tube. The unpleasant smell emitted by this inflorescence attracts small flies and midges; these crawl down the spadix and rub against the flowers, thus effecting pollination. The spadix bears both staminate and carpellary flowers. As the stigmas of the latter come to maturity before the staminate flowers discharge their pollen, they are generally fertilised by pollen which the insects bring from other flowers. The Italian Arum (*Arum italicum*), which is commonly met with here in the spring, is pollinated in the same way. Its arrow-shaped leaves (Fig. p. 41) are much larger and more pointed than those of the Arisarum. The venation is of a lighter green than the rest of the leaf, so that it is easy to distinguish these two plants even when not in flower. *A. italicum* flowers later than Arisarum. Its inflorescence resembles that of the *Calla aethiopica* so commonly grown in pots at home. The thickened end of the yellow spadix protrudes from a large white spathe. In this flower it is not so much the smell, as the conspicuous yellow colour of the spadix and the warmth given out by it that attracts the midges upon which the pollination depends. The temperature begins to rise in the morning and reaches its maximum between six and eight in the evening. A spadix will then attain

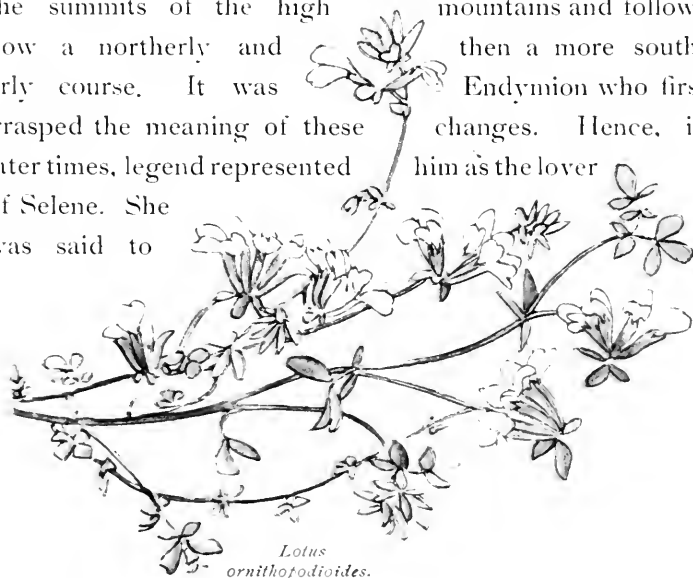
40° C and its warmth can be felt if you touch it. The spadix decreases much in weight during this rise of temperature, for it consumes a portion of its substance by increased respiration. In fact we might almost say that the spadix was feverish! It is very interesting that this phenomenon should be made use of by the plant as a device for cross-fertilisation.

No botanist will fail to notice the yellow spots on many of the leaves of *Arisarum vulgare* in the spring. They are caused by a curious parasite which attacks and kills portions of the Arisarum leaves. In highly organised plants these blights are generally caused by colourless *Hyphomyces*. But in this case it is caused by a green alga (one of the Siphonaeae), *Phyllosiphon Arisari*. This is remarkable because living parasitic plants are not as a rule green. Since the green colouring matter is characteristic of plants which obtain their own nourishment from the air, it is naturally not needed as soon as parasitism begins. The green colouring matter may perhaps be retained in *Phyllosiphon* because this alga has not long been living in this manner. All its closest relations support themselves independently and are mostly aquatic.

CHAPTER IV.

It is very lovely in the little garden of the Hôtel d'Italie at Garavan when the full moon stands high in the heavens. Then it hangs over the sea, tracing silvery hieroglyphics on its shimmering surface. Its beams shine into the garden through the trembling foliage of the

Olive trees and cast mysterious shadows upon the paths. On evenings like these we are reluctant to retire to our rooms, and stroll up and down out of doors until a late hour. "No planet — so wrote Pliny — can charm one as does the moon. She is the earth's nearest relation. Nature created her to banish the shades of night. . . . How manifold are her forms! At one time she is curved into a crescent: at another cut in twain: then again rounded into a full orb. How often does she darken and disappear, only to reappear in full splendour. Sometimes she watches faithfully over the earth during the whole night, or at others appears only at a late hour. Occasionally she is visible even in the daytime, as companion to the sun. Now she is low down on the horizon, now high up in the heavens. Sometimes she seems to touch the summits of the high mountains and follows now a northerly and then a more southerly course. It was Endymion who first grasped the meaning of these changes. Hence, in later times, legend represented him as the lover of Selene. She was said to



*Lotus
ornithopodioides.*

have often come down to caress the beautiful youth as he rested upon the mountain of Latmos. How ungrateful are we to those who, through weary research, have thrown light upon the sources of light. O miserable perversion of the human mind which loves to fill the annals of history with accounts of bloody deeds and to mislead the ingenuous minds of youth with these narratives!"

CHAPTER V.

The full moon had shone clear and bright the whole night through, but next morning clouds came up from the east, and soon the whole sky was overcast and grey. Yet the Mediterranean remained blue, retaining its characteristic tint.

The Mediterranean owes the deep blue, which we so admire, to the transparency and clearness of its waters. Most masses of water are blue by transmitted light. This is why the ice of crevasses and glacier caves appears pure blue. If a sufficiently long tube, blackened within, with a mirror fixed at its lower end, be sunk perpendicularly into the Mediterranean, we should see the water in the tube shining like a sapphire. An object appears coloured to us when it absorbs certain rays of white light and reflects others. These reflected rays, when they reach our eye, create the impression of a certain colour which we ascribe to the object. Water is blue because it quickly absorbs the red and yellow rays of white light and transmits only the blue. To create this impression on our eye the rays which reach it must

have passed through the water. But in absolutely pure water the rays would not be reflected, but would pass straight on. Therefore water must contain a certain amount of impurities to appear coloured to us. Suspended particles are necessary to reflect the light. The smaller and fewer these particles are, the deeper does the light penetrate the water before it is reflected, and the bluer it appears when it reaches our eye. So that the geographer Krümmel is justified in saying that the more clear and transparent the water, the purer its blue. The northern seas are as a rule less clear than the southern ones, because in warmer and saltier water the particles of foreign matter sink to the bottom quicker: thus it is that the southern seas are famous for their blue colour. As lakes are more liable to be charged with impurities, they rarely fulfil the conditions necessary for blue hues. It has lately been discovered that *plankton*, that swarm of minute organisms which live suspended in the water, contributes largely to the impurity of lakes and especially of the sea. The northern seas are the richest in plankton. The eastern end of the Mediterranean has been found to be particularly poor in plankton, and this is just where the blue is the most intense. Some physicists have suggested that the fineness of the particles suspended in the water may also contribute to the depth of its blue colouring. For the smaller the particles the more imperfectly are the long-waved red rays, and the more perfectly the short-waved blue rays reflected: and thus the blue colour is intensified. This same phenomenon, taking place in our atmosphere, is said to be the cause of the

blue colour of the sky. The clearer the air and the finer the particles suspended in the upper regions, the bluer the vault of heaven. When there is much impurity in the atmosphere the sky becomes grey: without any impurity it would appear black as does interstellar space. In southern seas the blue is less intense near the coast, and here green tones are seen when the water is more troubled. Changes of colour often ensue when the impurities are stirred up by a rough sea. It is only in shallow water that the bottom reflects its colour and imparts it to the water. The statement, therefore, that the southern seas owe their deep blue to reflection from the sky is quite incorrect. The Mediterranean can look blue even when the heavens are overcast. Still those who have been fortunate enough to see and admire the exquisite colouring of the southern seas know that the tint of their waters is influenced by the condition of the sky: that their wide expanse reflects the changing phases of the firmament, laughing and weeping, as it were, in harmony, clothed at eventide in purple, mourning in the deep half shades of a cloudy day, gleaming like gold in the sun and like silver in the moonlight. Thus in its endless changes the sea, never monotonous, charms us with its magic spell.

At Mentone the Mediterranean soon attains a considerable depth. The bottom sinks rapidly, so that at about twenty-five miles from the shore the sounding-line registers 8,250 feet.

Nobody ventures to bathe here in the winter, and yet the temperature of the water does not fall below

twelve or thirteen degrees even in January. In shallow places, when the sea is calm and the sun has been shining on it for some time, it is often appreciably warmer than this.

We have no need to consider the tides in the Mediterranean, for the difference in level between high and low tide amounts only to thirty or forty centimetres. This is the same in the Baltic; but, on the other hand, the saltness of the Mediterranean is almost double that of the Baltic, the one containing, on an average, four per cent of salt, the other only 2·2 per cent. The Mediterranean is 0·5 per cent saltier than the North Sea.

CHAPTER VI.

I can remember the time when numerous Tamarisks (*Tamarix gallica*) adorned the shores of Mentone. It was a lovely sight in the spring, when their slender branches, thickly covered with pink flowers, drooped over the sea. This Mediterranean plant is gradually becoming rarer on the Riviera, and it may be looked for in vain at Mentone. Where it once grew plentifully the broad Promenade now stretches between Mentone and Cap Martin. But from time immemorial the Tamarisk has been characteristic of the Mediterranean flora, and according to Homer, Odysseus hung the armour of Dolon upon one of these trees.

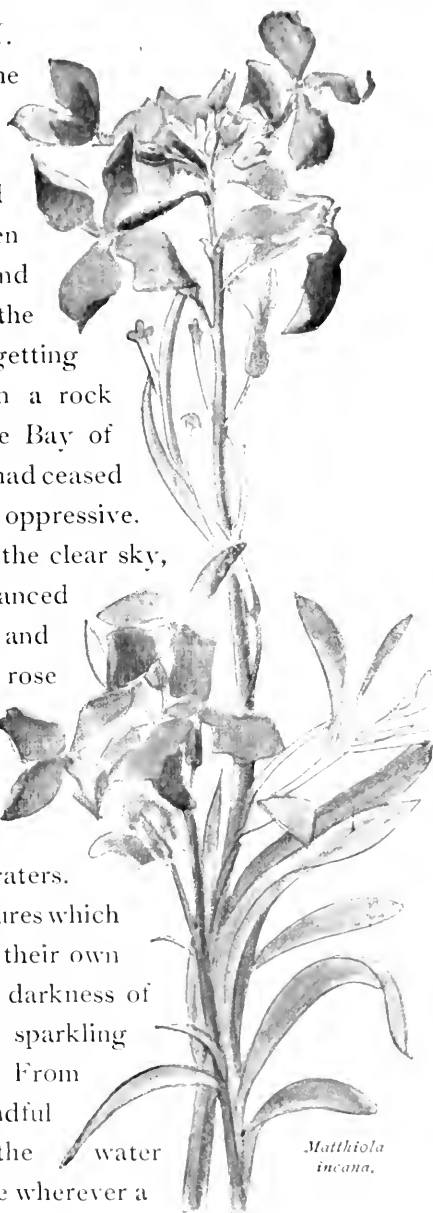
On the other hand the African *Ricinus* has succeeded in naturalising itself on the sea shore at Garavan, where it grows almost to the height of a tree. These Ricinus shrubs are common on the Riviera di Ponente where the climate seems to suit them. *Ricinus communis*, the

“Castor Oil Plant”, is very adaptable and behaves as an annual in our gardens, completing its development in the year. It can ripen its fruits even at Christiania. It has been introduced into all countries. That it came from Africa is probable, but difficult to prove. We value this plant for its large handsome palmate-lobed leaves. In the autumn it produces its flowers in panicles; the clusters of yellow staminate flowers below, and the carpellary flowers with their red stigmas above. In the north the plant is killed by the first frost. The fact that the *Ricinus* lives so many years on the Riviera and grows to such a size, bears eloquent testimony to the mildness of the climate here. The purgative properties of the Castor Oil were already known in ancient Greece, and Dioscorides enumerates it among the aperients. In the Middle Ages also it was used for the same purpose. Albertus Magnus cultivated this plant under the name of “Kik”, and it is still called “Kiki” in Greece today. This plant is called “Wunderbaum” in German, because it was thought to correspond to that “Gourd” which, according to legend, grew up so rapidly in one night that it was able to afford shade to the Prophet Jonah. The sharp-tasting *Ricinus* acid, as well as several other fixed acids, have been extracted from Castor Oil; but it has not yet been ascertained to which principle the purgative effect is due. The Chinese deprive the oil of its purgative properties by boiling it with alum, sugar, and water, and when treated in this way the oil may be used for food. A famous Chinese dish, which strangers also appreciate, is shark’s fins fried in Castor Oil.

CHAPTER VII.

In the afternoon the Sirocco began to blow and it became hot and sultry. After supper I went out into the garden in front of the house and then further down to the shore in the hopes of getting cool. I sat down upon a rock which juts out into the Bay of Garavan. The hot wind had ceased but the air was still oppressive.

The stars shone in the clear sky, and their reflections danced on the waves. Here and there bright lights rose mysteriously out of the deep: they flashed on the crests of the billows, or traced long streaks on the dark waters. These were marine creatures which were illuminating, with their own light, their path in the darkness of night. I watched this sparkling and gleaming of the sea. From time to time I threw a handful of pebbles down into the water which appeared to ignite wherever a



*Matthiola
incana.*

stone fell. Then I strolled to the port and engaged a boatman to row me out some distance into the open sea. At each stroke of the oar the water was lighted up; it flowed off the oars like liquid metal and washed round the bow like a cascade of fire. It was a wonderful sight. I had not seen the sea shine so beautifully for many a long year. I once saw it even more beautiful — in the Gulf of Smyrna. Then the crests of the waves were like fiery sheaves, and the ship sailed through a sea of flame.

On land also there are organisms which shine in the dark; but their number is small compared to that of the luminous inhabitants of the sea. The mycelium of certain fungi, which live on rotten wood, give out a phosphorescent light in the dark, and then the decaying wood itself appears to shine. Many a superstitious wanderer has been terrified on a dark night by the uncanny appearance of a half-fallen tree trunk shining mysteriously. This phosphorescence is most common in the height of summer and in the autumn after continued rain, and in sultry weather. The light is white and dull like that of phosphorus in a darkened room. Root stumps, which have remained so long in the soil of a forest that they are beginning to decay, are generally permeated by the luminous mycelium of a fungus. A small piece dug up and laid in damp moss at home will begin to shine in the dark after a little while. This will probably be the luminous mycelium of the Halimash (*Agaricus melleus*), a fungus commonly parasitic on wood. One of the prettiest of these natural illuminations in our regions takes place at the summer solstice when, late in the evening,

the groves in Germany are lighted up by thousands of glow-worms (*Lampyris noctiluca*). Only the males of these beetles fly, drawing bright streaks through the air, while the females, which are also luminous, remain on the ground.

The number of luminous inhabitants of the sea is endless; almost every division of the Animal World contains luminous representatives. But only a few of these creatures contribute to the nightly illumination of the surface of the sea. The rest live in the depths below and shine in the perpetual darkness. The lighting up of the surface of the sea is the result of the aggregation of countless numbers of lowly organisms. It is they who border each wave with a silvery hem and trace the ship's course as a shining furrow. Most of these organisms belong to the Animal World, but many minute plants are associated with them; these permeate the sea and are known as *plankton*. This plankton lives suspended in the upper layers of the water, or at night rises to the surface. But the fiery streaks which shoot through the water are emitted by more highly organised creatures, generally those large bell-shaped Medusae, which the Arab so appropriately calls "Lanterns of the sea".

There are light-emitting bacteria in the sea; these are sometimes met with on land also. They do not, however, contribute to the illumination of the sea, although they are found in all seas. They settle upon other organisms which then begin to phosphoresce in the dark with a silvery-white or bluish-green light.

But this only takes place on exposure to the air, for the Photo-bacteria cannot shine without oxygen. This phosphorescence is easily transferred from fish to meat; hence the opinion so long held that phosphorescent meat must have been in contact with fish. But lately the botanist Hans Molisch has established the fact that luminous bacteria are regularly met with inland. They require a little salt, and this may explain why luminous bacteria have not yet been proved to inhabit fresh water. Mention is made of phosphorescent meat in very ancient times, but the first reliable information about it dates from 1592 and is due to the famous anatomist of Padua, Hieronymus Fabricius ab Aquapendale. Anyone can easily observe this phenomenon if so inclined. But a butcher who noticed it would, for good reasons, conceal it, for phosphorescent meat looks unpleasant, and rumours of such an occurrence might injure his trade. Luminous bacteria are, however, quite harmless, and even a phosphorescent sausage may be eaten without any danger, provided, of course, that it is not bad in any other way, and does not contain any of those poisonous Ptomaines which are known in Germany as "Wurstgift". A low temperature favours the development of luminous bacteria, so that they thrive in ice cellars and cold storage rooms. Most pieces of meat, if laid in a three per cent solution of salt and water so that they are not quite submerged, should begin to phosphoresce after a few days. Phosphorescent meat need not necessarily smell bad, for it may only be in the very first stage of decay. The bacteria which

cause this phenomenon are called *Micrococcus phosphorus*. They are minute spherical or ovoid cells whose diameter does not exceed one or two thousandths of a millimeter. At a temperature of from nine to twelve above zero these organisms shine so brightly that their phosphorescence can be seen even in the day time in the diffused light of a room. They are very sensitive to higher temperatures, and about 30° suffices to kill them. These bacteria therefore could hardly exist in our bodies. They have been photographed by their own light. Like the phosphorescent fungi they shine without intermission, while the luminous organisms in the sea shine only when they are irritated. Hence the shock of a stone thrown into the sea causes this light-reaction in these lower organisms. The sudden illumination of these organisms when irritated may be protective and intended to terrify the approaching enemy. But this light must have other advantages for those creatures which live in the ocean depths: it must facilitate their quest for food.

In all luminous creatures the emission of light is associated with life and disappears at death. In spite of this the physiologist Raphael Dubois has succeeded in extracting the luminous substance produced in abundance by certain molluscs, the so called "Sea-dates" (*Pholas dactylus*). It had long been known that the hands and mouths of those eating these molluscs became phosphorescent. From this luminous substance Raphael Dubois made crystalline "Luciferin", and a ferment called "Luciferase": and when he mixed these the solution phosphoresced. Raphael Dubois and Mollisch

endeavoured to use the luminous bacteria for making living safety lamps. Glass globes were coated on their inner surface with a thin layer of gelatine containing germs of *Bacterium phosphorium*. The bacteria increased rapidly and after a day or two began to shine with a beautiful bluish green light. This lasted a fortnight. A few of these globes are sufficient to illuminate a dark room so that objects can be clearly seen. Since the cold light of these bacteria does not ignite either powder or gas these lamps may perhaps come into use in powder magazines and specially dangerous mines.

CHAPTER VIII.

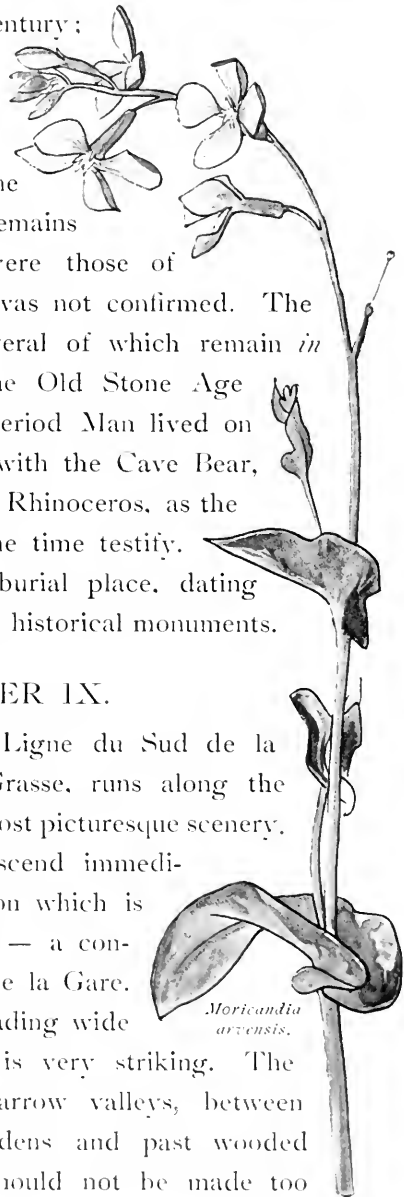
Among the coloured pictures seen in the shop windows of Mentone there are always views of the "Baussi Rossi" representing them in the reddest of evening lights. The rocks which go by this name are actually in Italy, and are soon reached by the road which runs along close to the sea beyond Garavan. They are formed of a reddish lime-stone. There are caves in these rocks in which important discoveries of prehistoric remains have been made. The view of Mentone from this projection of the coast is very beautiful, even though not equal to that from the road above. Those who are not afraid of a steep climb would do well, after visiting the caves, to ascend the footpath which leads up to Grimaldi, returning to Mentone by the upper road.

The caves of the Baussi Rossi had already aroused the interest of Horace Benedict de Saussure towards the

end of the eighteenth century; but they did not become famous until after the excavations of 1872, 1873, and 1892. For some time it was thought that the remains found in these caves were those of Tertiary man. But this was not confirmed. The skeletons found here, several of which remain *in situ*, really belong to the Old Stone Age (Palaeolithic). At this period Man lived on the coast here together with the Cave Bear, Aurox, Cave Hyaena and Rhinoceros, as the bones dug up at the same time testify. Thus this is an ancient burial place, dating back far beyond our oldest historical monuments.

CHAPTER IX.

The narrow gauge "Ligne du Sud de la France", from Nice to Grasse, runs along the mountain slopes through most picturesque scenery. The railway begins to ascend immediately on leaving the station which is in the Avenue Malausséna — a continuation of the Avenue de la Gare. The view over Nice, spreading wide with its palatial Hôtels, is very striking. The line leads on through narrow valleys, between country houses with gardens and past wooded slopes. This excursion should not be made too



*Moricandia
arvensis.*

early in the season, in any case not before the commencement of April, as the heights only then begin to deck themselves with their green spring covering. We soon reach the valley of the Var, in whose pebbly bed there are generally only narrow channels of water. This view is not exactly fine, but the eye is at once attracted by the background of mountains — those mighty snow peaks that tower beyond the gorge through which the Var flows. They stand in line, the Caire Cougourda, Caire Agnel, Cima Giranda, and all the other giants of the Maritime Alps. In the foreground, on steep heights, the grey villages of Carros, Bonson and Gattières keep watch over the valley, looking as if they had been placed there to enhance the romantic beauty of the landscape. To the West the mighty rock of Baou de St. Jeannet forms a frame to the picture. With this scene before us we reach Colomars where the line divides. One branch continues on the left bank of the Var, the other crosses it and turns up towards Grasse. Here the rail at once begins to ascend steeply and the scenery grows grander as we proceed. Now in the far distance to the east the snowy crest of the Cima du Gélas, 10,359 feet high, dominates the scene. The massive cliff of the Baou de St. Jeannet looms larger the nearer we approach. It is as conspicuous a feature of the landscape here as the Tête de Chien in the Monaco district. To the south-east of St. Jeannet, and visible from afar, lie the ruins of a castle, called by the people "The Witches' Castle". It was once a "Commanderie" of the Knights Templar, and its massive walls still defy the ravages of time. At

St. Jeannet the luggage van of our train was filled with baskets which emitted a strong perfume. They evidently contained Rosemary and Thyme, and as the luggage van was in front of the train we now travelled in a scented atmosphere and must have left behind us a long trail of perfumed air. The old town of Ventium, the dark grey Venice of today, once inhabited by the Ligurian Nemesii, which I had hitherto only seen from a distance, now lay at my feet. Then the line continued, crossing the valleys on high bridges, or winding along the mountain side on narrow ledges. Looking inland we saw the deep ravine of Cosson, with the picturesque hamlet of Tourettes-sur-Loup overhanging it at a great height: to the south-east lay the sea glittering in the sunshine. A bold viaduct crosses the Loup, whose romantic gorge is much visited from Grasse. Wonderful are the foaming cascades that dash down the steep rocks into the depths below. The train reaches the old town of Le Bar by a long bridge. This town was once a Roman Post. Again we move on, and Grasse and the wide plain of the Siagne suddenly come into view.

CHAPTER X.

Grasse lies on the steep slope of Rocavignon. It is well protected from the north, and its gardens are the highest on the Riviera in which Palm trees thrive. The greater part of the town still retains its mediæval aspect. Its streets wind up the slope, while shorter cuts are made by steep steps. The opposite buildings are bound together by buttresses as though to prevent their slipping down

the hill. The people throng the streets in the evening. Sometimes the crowd is so dense as to impede the traffic. Here and there the old houses, grey with age, have been fitted with large shop windows displaying goods which are little in keeping with their surroundings. From many of the house doors there issues a smell of grease, onions and garlic. Dishes of unmistakable Mediterranean savour are being fried. But this smell of oil is combined with a penetrating perfume which might be pleasant enough in more open places; it comes from Sandal-wood which is spread out in the perfume factories. The working of it had just begun.

Grasse is of very ancient origin, but has been repeatedly destroyed. Its restoration in the sixth century was, according to a legend, accomplished by Jews. They were said to be descendants of those Jews who were driven out of Rome by Tiberius towards the year 19 of our era. During the persecution which broke out in Provence in the sixth century these Jews turned Christian and received the ruins of the old Roman town as a reward. It is they who gave it the name of "Gratia". The arms of Grasse bear a silver Paschal Lamb on an azure field, and some have sought to connect this with the former conversion of those who rebuilt the town.

We do not consider Grasse exactly beautiful; even the view of the distant sea from its squares and gardens does not enchant us. For the stiff and formal barracks beyond the hills are an eyesore. But the view of Grasse itself is pleasing from the garden of the Grand Hôtel, which is reached in twenty minutes by the new Avenue

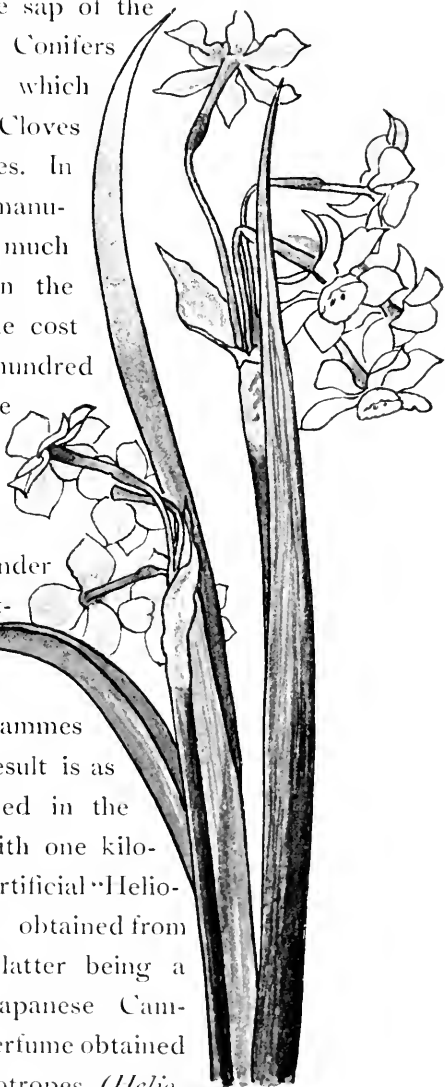
Thiers at the upper part of the town. The Agaves and Palms in the garden frame the view of the Old town most effectively and they hide the unsightly new buildings, leaving only the angular old towers and houses that lie crowded pell-mell on the slope of the hill.

However the object of our visit to Grasse was not to enhance our impressions of the scenery, but to obtain an insight into the complicated perfume industry here. Grasse has been renowned for more than a hundred and fifty years for these products, and its success in this manufacture dates back even farther. We were shown the house in which, in the second half of the sixteenth century, Sieur Tombarelli of Florence had fitted up a laboratory for making perfumes. Grasse is now one of the chief perfume manufacturing towns of Europe. It does not, however, supply the prepared perfumes, such as the so-called "Bouquets", but only the first extracts of which these are composed. "Bouquets" are mixtures which the perfumers prepare according to the prevailing fashion or taste. The composition of these mixtures is generally kept secret, and their blending is a peculiar art requiring great experience and special aptitude. Sometimes these mixed perfumes bear names which have no reference whatever to their origin. This is the case with the widely used "Corylopsis du Japon". It is true that several species of the genus *Corylopsis* belonging to the order Hamamelidaceae occur in Japan, and are also cultivated in our gardens as ornamental shrubs, but they have no perfume whatsoever. Dr. E. Gildermeister informs me that it was for this very reason that the perfume was given this name

by the inventor. For the names of perfume-yielding plants are not allowed to be registered at the Patent Office for the Protection of Names of Perfumes. The perfume called "Corylopsis" is practically a mixture of all possible kinds of ethereal oils, but particularly Oil of Roses, Patchouli, Lavender and Bergamot, besides Musk and Civet.

Grasse extracts its perfumes almost exclusively from the Vegetable World. But now chemistry is beginning to influence the perfume industry, as by it the fragrant substances are manufactured absolutely pure. It has been particularly successful in producing Cumarin, the substance that is used to represent the smell of mown grass and plucked Woodruffe, out of Salicylaldehyd. The process is somewhat complicated, but the aromatic substance, which is obtained in shining colourless crystals, is precisely the same as that contained in the Tonka-bean, the seeds of the Tonka tree (*Dipterix odorata*) of Guiana, and in the stalks of *Liatris odoratissima*, a composite which grows in Florida and is used for scenting tobacco and cigars. With about twenty grammes of artificial Cumarin as much can now be effected in the perfume factory as with a kilogramme of Tonka-beans. It is the same with the natural "Winter-green oil", which is extracted from a North American shrub, *Gaultheria procumbens*, belonging to the Ericaceae, and which is now completely replaced by artificially made Methyl Salicylate. But on the other hand Bitter Almond oil, which was so much used in perfumery, has been only partially supplemented by artificial Bensaldehyd.

Chemistry has achieved splendid results with Vanillin. This is obtained from the sap of the young growing wood of Conifers and also from Eugenol, which is contained in Oil of Cloves and many other substances. In the course of years its manufacture has become so much cheaper that, whereas in the year 1867 one kilogramme cost six thousand marks, a hundred kilogrammes can now be bought for that sum. Vanilla pods yield only from one-and-a-half to two per cent of Vanillin under the most favourable conditions: so that with from twenty to twenty-five grammes of Vanillin the same result is satisfactorily obtained in the perfume factory as with one kilogramme of Vanilla. Artificial "Heliotropin" is now obtained from Safrol, this latter being a product of a Japanese Camphor oil. The quantity of perfume obtained from the flowers of Heliotropes (*Heliotropium peruvianum* and *grandiflorum*) is



*Narcissus
Tazetta.*

so small that this discovery is all the more welcome. As it is quite impossible to extract the delicate perfume of the Lily of the Valley it is a matter of import to the perfume distillers that an extract with the same scent can now be distilled from an alcohol, known as Linalool. In Nature Linalool is pretty widely distributed as a constituent of various ethereal oils, but it occurs more abundantly in Linalool, which is obtained from the wood of Mexican and Guianan trees, the first belonging most certainly to the Burseraceae and the latter probably to the Lauraceae. Crystalline Thymol is now much used. This is not distilled from Thyme but from the seeds of the East Indian Umbellate *Ptychotis Ajozvan*; also Menthol, which, though not used in the manufacture of perfumes, forms an ingredient of remedies for headache and is used as snuff. Not long ago two substances were artificially produced, "Iron" and "Jonon". The aroma of both these almost exactly corresponds to that of Violet blossoms. Merely opening a test-tube filled with these extracts is sufficient to scent a whole room with the odour of Violets. It is a remarkable fact that at times these two extracts do not smell as strongly as at others and fresh Violets exhibit the same variability in strength of odour. Iron is extracted from the so-called "Violet root", the dried root-stock of *Iris florcutina*; but it is sold at a very high price, as a hundred kilogrammes of root-stock only yield from eight to thirty grammes of Iron. It is therefore of great importance to the perfume industry that the manufacture of Jonon from Citral, which is a constituent of Citron-oil and is still more

abundant in Lemongrass-oil, has been successfully accomplished. Not long ago artificially produced Orange-flower-oil, Madarin-oil and Jasmine-oil were added to the number, and quite recently the oil of Ylang-Ylang. Hitherto this latter has only been extracted from the flowers of a tree cultivated in Southern Asia, *Cananga odorata*, belonging to the Anonaceae. An attempt has been made to substitute the artificial Muse Baur, or Tonquin Oil, for the musk of the male Musk animal, and the use of this product is increasing. From time immemorial valuable scents have reached us from warmer zones, as did the Balsams in ancient times. But in the main the perfumers owe their most fragrant scents to Southern Europe. Most aromas distilled from plants are obtained in the form of ethereal oils, which, unlike the fat oils, are volatile and produce on paper a transparent spot that soon vanishes. The Animal World cannot produce these oils. In plants it is chiefly the flowers that contain the fragrant essences. For in these perfume and colour unite to attract those creatures which carry the pollen from blossom to blossom. Yet occasionally it happens that the scented substance may be collected in some other part of the plant; for example Iron in the root-stock of Iris, and Vetiver in the root-stock of the East Indian grass, *Andropogon muricatus*. The wood of tree-stems may contain perfume, as for instance the wood of the Balsam-yielding tree, or the East Indian Sandalwood-tree (*Santalum album*). In the Cinnamon-tree (*Cinnamomum Zeylanicum*) it is the bark that contains the scent. Again in other instances it is the leaves that are the most frag-

rant, like our Peppermint (*Mentha Piperita*), or Melissa (*M. officinalis*), or the Indo-Malayan Patchouli (*Pogostemon Patchouli*). Finally fruits and seeds may also contain the scented materials, as for instance Vanilla or Cumin. White flowers generally yield stronger and more delicious fragrance, whereas brown and orange-red flowers yield very little of any value to the perfume industry.

We had provided ourselves with the necessary introductions, and were permitted to inspect some of the largest Perfume factories in Grasse. The processes were in the main everywhere the same. Sweet scented substances that are abundant in one portion of a plant, and are secreted in rather large glands, can be set free by pressure. In other cases the usual process of distillation is employed, provided that the essence will not suffer by being heated. Where this is to be feared distillation is carried on under a low air pressure and at a much lower temperature. But frequently, when the latter process is not advisable they have recourse to maceration with liquid fats, to absorption by cold fats, or to volatile solvents. Certain flowers are unsuited for distillation as they contain too little ethereal oil. Again some flowers, such as Jasmine and the Tuberose, continue to produce scented substances even after being gathered, and therefore must not be killed immediately. The problem is, then, how to extract the scent from them as it is being formed. Such flowers are the very opposite of those that require to be rapidly killed because their scent substance decomposes easily. If material of this sort cannot be worked immediately, it

is put into special receptacles which are filled with the vapour of a suitable solvent, probably ether.

When we arrived in Grasse the Violet harvest was over, and the Jonquils were in full bloom. Violets contain only minute quantities of the fragrant substance which is extracted chiefly by fat. In this way they get a Pomade which smells of Violets. The fat which is employed for this purpose must of course be perfectly pure, and we observed that at the factories it is obtained from freshly slaughtered animals such as pigs, oxen and sheep. The fat is then put into special machines which shred it up. The fat can then be melted out without being subjected to a very high temperature. After cooling, the clear fat is then ground in mortars and repeatedly washed in clean water. It is then melted again, and alum powder added to it: then quickly boiled up and skimmed. But this does not yet complete the preparatory treatment. The liquid fat has still to be pressed through linen, and boiled with rosewater and powdered Benzoic resin, and must be skimmed as long as froth continues to form. By the addition of Benzoine, or other Balsams, and very careful washing, the fat is prevented from becoming rancid. For salves, fine oils, especially olive oil, are employed. They soak pieces of coarse cotton in this oil, and allow the perfume to be absorbed by it, then squeeze it out under strong pressure.

For the manufacture of violet perfume the delicate blue, double variety, "Violette de Parme", is preferred. The flowers must not be wet when taken to the perfume factory. This rule applies to all other plants that

are to be treated with fat. Therefore they gather the Violets early in the morning when the dew has disappeared, but before the sun has become hot. Immediately after gathering, the flowers are taken to the factory where, if they are to be treated by the process of maceration, they are put into fat which has been warmed, and which is kept liquid in a bath of water at a temperature of from 40° to 50° C. After a few hours the fat is strained off from the Violets and again replenished with fresh flowers. This is continued repeatedly until the fat is quite saturated with violet perfume. From this fat the scented substance is extracted by shaking it up with spirits of wine, or good refined corn-brandy.

As the violet pomade produced by the heating process sometimes smells a little of sulphur, the cold process, which is called "enfleurage", is employed to extract the scent. In the factories we visited we saw many rooms filled with wooden frames placed one above the other. Each frame contained a sheet of glass spread with fat and strewn with Violets. The frames fitted exactly on to each other so that no perfume could possibly escape. When the perfume of one layer of flowers is exhausted, these are replaced by fresh ones, and this is repeated until the fat is saturated.

Recently the Petrol-ether method of extraction has come into use for Violets. This treatment takes advantage of the great volatility of certain substances, in which the scents of plants are soluble, especially that of Petrol-ether, to extract perfumes from the plants, and to separate them again from their solvents at a low temperature. Special

machines are employed to keep the solvent in circulation and thus to ensure its coming into contact with the flowers for as long as is necessary. This solvent is then evaporated into special reservoirs. Evaporation is effected by reduced air pressure, without any substantial increase of temperature, and the solvent is again condensed in cooled reservoirs for further use. By this process it is possible to use up the fragrant portion of the plant to greater advantage than formerly. The product thus gained, when treated with alcohol, forms a highly concentrated essence.

As it requires a very great number of Violets to produce a strongly scented essence, endeavours have long been made to find a substitute for these flowers. Therefore instead of Violets the "Violet-root" was generally, and is still, employed for sachets. Pliny informs us that pieces of the root-stock of Iris, peeled and dried, were, in Roman times, hung round the necks of teething children, as is very frequently done now.

There was some uneasiness among the Violet-growers in Grasse when the use of Jonon began to spread. They thought that this discovery would put an end to their Violet culture, but the reverse was the result. For its perfume requires an addition of the natural product to fully develop its qualities. And the artificial production of Jonon contributed not a little to the increased use of Violet per- *Nitophyllum punctatum.* fume, so that the

demand for the natural product increased also. As with the Violet perfume, so it has been with other vegetable perfumes; the competition of the artificial products, instead of harming them, only served to increase their output.

In Grasse, too, the aroma from the heavily-perfumed yellow Jonquil (*Narcissus Jonquilla*), has, until quite recently, been extracted in cold fat by the process of enfleurage; it is now amongst those plants treated by Petrol-ether. Only the single-blossomed Jonquil is grown in Grasse for the scent factories.

As at the time of our sojourn in Grasse Jonquils were already getting scarce, the work with fresh flowers was becoming slack in the factories. Orange-flowers, Roses, Heliotropes and Reseda only come in May. For this reason they had taken the Sandal-wood in hand. We saw large piles of this valuable brown wood stacked in the store houses. It is very expensive, for it is likewise much treasured in its East Indian home. There they manufacture beautiful carved furniture, especially costly boxes, out of this wood. For its fragrance keeps off insects and drives away even the all-destroying white ants. The Buddhists burn great quantities of Sandal-wood as incense, and the Sandal trees have been quite exterminated in some places. In the factories Sandal-wood oil is obtained from the chopped up wood by distillation with water. The oil passes out with the steam from the retort into the cooler, whence it flows with the water into the receiver. From twenty-five kilogrammes of wood about one kilogramme of oil is extracted; this is consequently expensive and is only used for very fine perfumes.

In the month of May the town of Grasse reeks with the overpowering odour of Orange blossoms. From two to three hundred thousand kilogrammes of flowers of the bitter-fruited Orange tree (*Citrus Bigaradia*) are then used in the factories for making perfumes. The flowers smell stronger and more delicious than those of the sweet-fruited Orange and are therefore almost exclusively employed. A tree from twenty to thirty years old will yield from fifteen to twenty kilogrammes of blossoms. By distillation a hundred kilogrammes yields about forty kilogrammes of Orange-flower water, and a hundred grammes of Orange-flower oil, ("Essence de Nérol"). Their scent can also be extracted by maceration in fat, and the Petrol-ether process is also used with these flowers. Orange-flower oil continues to be dear as it only exists in minute quantities in the flowers. The introduction of artificially prepared Nérol oil by the Leipzig firm of Schimmel and Co. does not appear to have affected the manufacture of the natural product. Orange-flower oil came into fashion about the year 1680 under the patronage of the Duchess Flavio Orsini. Princess Nérol, and Orange-flower water (Aqua Naphae) also became increasingly popular as a toilet requisite as well as for flavouring foods, confectionery and drinks. During our stay in Grasse they were complaining that, owing to over-production, the price of flowers had recently been much reduced. Indeed during the last decade a strong tendency to speculate has possessed the inhabitants of the Riviera. The rapidly increasing demand for fresh flowers had impelled many land owners to fell their Olive trees and

plant flowers in their stead. Now they often hardly know how to dispose of all the flowers. Added to this, the high temperature of this spring had caused the plants to develop so rapidly that at the markets in the town one could load oneself with large bouquets of the most beautiful blossoms for a nominal price.

Petitgrain oil, which is distilled from the leaves, twigs and unripe fruits of the bitter-fruited Orange, is naturally cheaper than Néroli oil. It is often used to adulterate Orange-flower oil, to which it is considerably inferior in delicacy of scent. The perfume extracted from the blossoms of the sweet-fruited Orange is distinguished by special qualities, and is known as Néroli-Portugal oil. But I learn from the work on ethereal oils by E. Guildenmeister and Fr. Hoffmann that this oil, as sold in the trade, is not at all pure, but is composed of a mixture of various Orange oils.

The Orange oil which is extracted from the fresh peel of ripe fruits of the sweet-fruited orange tree is obtained in winter time. It is easy to prove that a great deal of ethereal oil is present in the rind of an orange. You need only squeeze the peel close to a flame when the expressed oil will ignite. The glands in the rind which contain the oil are so large that they can be seen with the naked eye.

The oil from the sweet-fruited as well as from the bitter-fruited orange peel is made use of in perfumery. And the ethereal oil of Bergamots, Mandarins, Limettes, Pampelmousse and Lemons is used for various purposes. In Nice they used to employ an instrument called

“Eccuile à piquer” for the purpose of extracting the oil from these rinds. This is a bowl with brass points against which they press the fruit. The cultivation of Agrumi for the sake of the peel has almost been given up in the South of France, and in Europe it is chiefly Sicily and South Calabria that carry on this industry. There they extract the ethereal oil from the rind by pressing it against a sponge, or by rubbing it between the fingers and allowing the sponge to absorb the oil which spurts out. The round Bergamots are likewise put into the “macchina” which bruises their rind while a sponge absorbs the oil. The rinds, from which the oil has been extracted, are salted and used as “Salato”. The juice of the fruit pulp, especially that of the lemons, is used for various purposes; and lastly the remainder is given to the cattle for food.

We also saw in Grasse cupboards containing wooden frames piled one on the top of the other. These had not sheets of glass, but wire net stretched over them. On these were alternate layers of flowers, and fat in threads like vermicelli. The air in the cupboards was kept in gentle motion by bellows. It swept over the layers of fat and deposited its perfume there.

Other arrangements were also shown us for facilitating the extraction of the perfume. We saw apparatus for grinding up dried portions of plants, for grating fragrant wood, and reducing hard substances to powder. One machine, which kept in motion several sieves of different mesh, reeked with perfumes.

The process of extracting fragrance from plants by means of fat can also be applied, on a small scale, to obtaining the finest pomade from flowers which would perhaps otherwise fade unused in the garden. All that is required is the purest clarified fat spread on a sheet of glass, and a good, close-fitting box to lay it in. The flowers must be placed on the fat with the petals turned downwards, the box must then be shut and the flowers renewed before they are faded. The name pomade, or rather pommade, is derived from "pomme", apple, which shows that at one time apples must have been used in the manufacture of these perfumed fats. Aromatic spices, preferably cloves, were stuck into an apple, and after it had been exposed to the air for a few days, it was boiled down in fat. If the fat was not thoroughly perfumed by the first apple, the process was repeated. Many Roses are grown round about Grasse for the perfume factories. These are not the Roses that are exported in winter and fill the flower shops of the whole of Europe; but *Centifolia*, Damask and Musk roses. The Rose ranks next to Orange-blossom amongst the perfume-yielding plants of the Riviera, and the Jasmine is next in importance. The Roses are picked when just about to open, as soon as the dew has vanished. The harvest is in May and June. In Grasse each rose-stock yields, on an average, two to three hundred grammes of flowers, but from five to six thousand kilogrammes of Roses are necessary to obtain one kilogramme of Oil of Roses. It is not surprising then that one kilogramme of this oil costs over a thousand francs.

Oil of Roses is obtained by distilling the petals in water when it collects gradually on the surface. In spite



*Ophrys
Bertolonii.*

of the fact that only very minute quantities of the oil are dissolved in the water, this is sufficient to impart to it a strong perfume. Most of the Roses at Grasse are used for making Rose-pomade, and are therefore macerated in fat. Whereas Rose-pomade preserves, almost unchanged, the aroma of fresh Roses, the Oil of Roses alters a little. From the pomade they extract, by means of alcohol, the "Esprit de Rose", one of the finest scents that exists. There is hardly a perfume in the world that can compete in popular favour with that of Roses, and he who has travelled in the East will well remember the perfume of Roses, combined with bad smells, in the sunny streets. Those who think that they bring home pure Oil of Roses in those long, narrow, gold-ornamented phials from the Eastern Bazaars where they are sold cheap, are greatly deceived. Oriental Oil of Roses is almost always adulterated, generally with Palma-rose oil, or Indian Geranium oil, which in the East Indies is distilled from the Geranium Grass.

Andropogon Schoenanthus. The Indian distiller, on his part, generally adulterates his Palma oil with another oil, Coconut oil. It would therefore be better to fill your scent bottle at home with genuine Oil of Roses. Roses are extensively cultivated, not only in Germany but also in England, for the purpose of making Oil of Roses. In the year 1884 the brothers Fritsche, owners of the Leipzig Firm of Schimmel and Co., who are to be highly commended for their ethereal oils and essences, extracted three kilogrammes of Oil of Roses from German Roses for the first time. They have laid out extensive Rose plantations at Leipzig and these now cover a surface of 35 hectares. I take this account from the report, which the above mentioned firm publish annually, and from which one can not only form an idea of the magnitude of the business done in this factory but also gain an insight into the rational and scientific management of this enterprise. Under the auspices of this firm a valuable work on ethereal oils by E. Goldenmeister and Fr. Hoffmann has been published, and to it I am indebted for much information. Close to the Rose fields of Schimmel's factory are extensive plantations of Reseda and Peppermint, besides these there are also Tarragon, Artemisia, Lovage and Angelica. Bulgaria is, and will long remain, the chief country for the production of Oil of Roses, and it alone is able to supply nearly two thousand kilogrammes of this oil.

Palma-rose oil does not smell exclusively of Roses, its perfume is more like a mixture of Rose and Lemon.

The scent of Geranium oil is, on the contrary, almost exactly like that of Roses; it is made from the leaves of certain species of Pelargonium, chiefly *P. odoratissimum*, *capitatum*, and *roscum*. We can prove this for ourselves by taking a few leaves of this plant, which is often grown with us in pots, and bruising them between the fingers. The species that succeeds best on the Riviera is *Pelargonium capitatum*. Its cultivation there has declined recently owing to the competition of Algiers. The plants are gathered from the middle of August to the middle of September and delivered at the factories as quickly as possible. The firm of Schimmel and Co. are now very successful with Rose-Geranium oil. They distill 2,500 kilogrammes of fresh Roses with one kilo of pure Geranium oil and obtain a product that resembles the Bulgarian Oil of Roses very closely.

In the gardens of the Riviera one often meets with a Verbena, *V. triphylla* or *Lipia citriodora*, which is also known as Citronelle or Lemon plant. This beautiful shrub may be seen in the gardens on the Italian Lakes and its fragrant panicles of violet-tinted flowers may be examined in autumn. If its leaves are rubbed between the fingers they diffuse a delicious odour, which is intermediate between Lemon, Melissa and Verbena. This shrub comes from South America, and is grown on a large scale in several places on the Riviera. The genuine Verbena oil which is distilled from its leaves, is prized by many perfumers. This is however difficult to obtain, as Lemon-grass oil which has the same scent and is much cheaper, is commonly substituted for it. This oil

is obtained from grasses of the genus *Andropogon*, whose species are remarkable for so many fragrant oils. Lemon-grass oil is obtained from *Andropogon citratus* which is specially cultivated in Ceylon and Singapore. *Andropogon Nardus*, yielding the Citronelle oil which smells like Melissa, is cultivated on a still more extensive scale. This oil is increasingly used in the scenting of soaps, and is the chief ingredient in the perfume of Honey-soaps. We can form an idea of the extent of the production of Citronelle oil when we realise that on the hill slopes of Ceylon not less than twenty thousand hectares of land is planted with this grass, which grows a yard high. About six hundred distilleries are at work and produce annually about half a million kilogrammes of Citronelle oil. The factory of Schimmel and Co. make their Geranium oil from this.

The perfume of Reseda is extracted by the process of enfleurage and lately they have been using Petrol-ether. From Thyme, Sage, Rosemary, Lavender and Melissa the ethereal oil is extracted by means of distillation. Thyme, Rosemary and Lavender are very little cultivated on the Riviera: they are gathered in their natural habitats on the slopes of the hills where Rosemary and Thyme form the underwood. Lavender must be sought for in the higher regions of the Maritime Alps, for down on the coast only *Lavandula Stoechas* is found, and this is of little use to the present perfume factories as it smells much more like Rosemary than Lavender. To the ancients however this scent must have been particularly agreeable, for Pliny and Dioscorides mention only

Stoechas and no other species of Lavender. Because it smells like *Nardus Indica* it was named *Nardus Italica* or *Pseudo-Nardus*, and in Spain it is still honoured by the name of "Romero Santo" or Blessed Rosemary. There they extract from it an ethereal oil for household purposes by hanging fresh plants upside down in bottles, firmly closed and placed in the sun. A mixture of oil and water collects at the bottom of the bottle, and this is used to heal breakings-out on the skin, to wash wounds and to stop bleeding. From *Lavandula vera*, which grows at a higher elevation, the finer Lavender oil is made, and out of the *Lavandula spica*, which grows at a lower altitude, the Spike oil is extracted.

In earlier times they used to call all Lavender oils by the name of Spike oil. The Abbess Hildegarde recommended them for making eye lotions, and the dried flowers were made into aromatic pillows for the healthy as well as for the sick. In the sixteenth century no cottage garden was without Lavender. The small-leaved species, *Lavandula officinalis*, was the most usually met with. At this time it was a common custom to place dried heads of Lavender and dried petals of the *Rosa Centifolia* in vases in alternate layers and strew salt and spices in between. This mixture was called "Potpourri", and was a favourite incense, for in winter it was put on the hot stove and filled the room with an agreeable and delicate odour.

One day on the road to Agay some women were walking in front of us carrying on their heads loads of Thyme which they had gathered on the hillsides of the

Esterel close by. The wind was blowing in our direction and the perfume could be smelt hundreds of paces away. Those wild plants which will not bear transport are generally distilled in the open, immediately after gathering, in an apparatus known as a "Distillerie ambulante" which they move from place to place. This is usually set up in the neighbourhood of a spring or brook in order to provide the necessary supply of water for the cooler.

A great quantity of Rosemary oil is sent from the South of France to Cologne to be used there in the manufacture of Eau de Cologne. Eau de Cologne contains equal quantities of Orange- and Lemon-peel-oil, less Néroli oil, and still less Bergamot and Rosemary oil dissolved in 85 per cent alcohol. All these ingredients, even though mixed according to the best prescriptions and well selected, will not immediately produce good Eau de Cologne; for the fusion of the scents does not take place for some time. Data resulting from practical experience have been collected for some time, but the effects of storing have only of late years become the subject of scientific enquiry. The simplest example is a retail brandy which is made by diluting an 80 per cent spirit down to a 30 per cent spirit. This brandy, when freshly mixed, would not be relished by the drinker, even if he were not a spoilt connoisseur. It must be stored to render it palatable. It is well known that good wine gains valuable qualities by being kept. The ingredients in solution are working chemically on each other, and they appear to originate new combinations. Absolute stillness is necessary for this process, constant shakings

impede it; indeed it appears that combinations already begun can be destroyed by movement whether temporary or continuous. Knap is of the opinion that the results of storing depend

on processes called in

Organic Chemistry

Combination,

Substitution,

Disintegration and so on.

Consequently

in mixed per-

fumes also changes should

take place during storage, so that the different scents may be effectually blended. The origin of Eau de Cologne is disputed, and yet its invention may certainly be attributed to Johann Maria Farina, an Italian from Santa Maria Maggiore, near Domo d'Ossola, who in the beginning of the eighteenth century carried on a trade in perfumes and Colonial wares in Cologne. Not until the middle of the same century did Eau de Cologne first come into general use and supplant the "Eau de la Reine de Hongrie" or Hungarian Water. This was made in much the same way but contained more Rosemary oil, besides Oil of Roses and a trace of Peppermint oil. The French, who held the Rhine provinces during the Seven Years' War, were chiefly instrumental in spreading the use of Eau de Cologne.



Padina Pavonia.

During our wanderings in the neighbourhood of Grasse we saw a great many Jasmine plantations. From this we

realised the importance of this plant to the perfume factories. The Jasmine plantations were generally laid out in terraces on the hillsides facing south. These much-branched shrubs, about six feet high, with opposite evergreen leaves produce single flowers, and are known by the name of *Jasminum grandiflorum*. This species comes from the East Indies; the perfume of their flowers is delicious. They are fairly large, of a pure white on the inside and slightly tinged with red on the outer side. The flowering begins in July and lasts till October. A thousand plants will yield about fifty kilogrammes of flowers. Their perfume is extracted by means of enfleurage, that is with cold fat. The quantity of scent-substance which they contain is so small that the blossoms have to be repeatedly changed on the same layer of fat. The flowers continue to produce scent after being gathered. This is extracted from them as it forms by means of cold fat, which does not injure the blossoms. Thus enfleurage is decidedly advantageous in the case of Jasmine flowers, and could not be replaced by other processes. From the Jasmine pomade, the Extract of Jasmine is obtained by means of the finest Spirits of Wine. The most valued perfumes for the handkerchief contain this extract. They also make a "Huile antique au Jasmin" by the process already referred to of strewing the blossoms on pieces of woollen material soaked in olive oil and then pressing out the oil. This kind of Jasmine oil is very popular in France.

The flowers of the *Acacia Farnesiana* (Fig. p. 5) also play an important part in the perfume industry. We

had already had an opportunity of admiring this small tree in the Mortola Gardens. At Grasse *Acacia Farnesiana* is cultivated only to a very limited extent, but large plantations of this plant are to be found in Algeria. The small globular dark-yellow flower-heads, the "Cassie", are gathered from September to December; this requires both skill and practice as these plants are very thorny. The delicate violet-like odour of the flowers is absorbed by the process of enfleurage, or extracted by Petroleum-ether. The essence thus obtained is of great importance in the preparation of "Bouquets".

Finally we must not forget to mention the Tuberose, *Polyanthes Tuberosa*. This bulbous plant belongs to the family of the Amaryllidaceae, and is a favourite on our flower tables and in bouquets because of its beautiful white blossoms and powerful fragrance. Its home is in Central America, but as a rule we only see the double flowered variety which smells so strongly towards evening — another instance of the wide-spread phenomenon that flowers do not give forth the same strength of perfume at all times of the day. Who has not noticed that the Datura and Nicotiana, the Dame's Violet (*Hesperis matronalis*) and the Marvel of Peru of our gardens have scarcely any perfume during the day, while in the evening their fragrance is all pervading. On the other hand Water Lilies (*Nymphaea alba*), Gourd flowers (*Cucurbita pepo*), Bindweed (*Convolvulus arvensis*), are only fragrant during the day. This variation is of importance to the plants; they emit perfume by day or by night according as they require diurnal or noct-

urnal insects to carry their pollen. A large number of Tuberoses is required to saturate the fat with perfume so that this extract, like a great many other delicate perfumes, is very expensive. When spread out on layers of cold fat, the Tuberoses continue to produce scent-substance; in this way it is possible to obtain about twelve times as much perfume as with Petrol-ether, which kills the flowers at once. With us the Lilac, *Syringa vulgaris*, might be used instead of the Tuberose to make a very similar pomade by the same process.

It is not only the recognised "perfumes" of plants that are used. For the scent of cucumber is turned to account for many purposes. An essence is made by distilling the same alcohol several times with freshly cut slices of cucumber. With this essence the ointment known as Cold Cream is scented, and this gives it the refreshing aroma for which it is valued.

I must not omit to mention that an ethereal oil is distilled even from garlic. Of course this oil is not used in the making of perfumes, though one might sometimes think so in the south of Europe or in the East, but it is taken as a vermifuge. The firm of Schimmel and Co. who prepare this, as well as nearly all other volatile oils now in use, recommend garlic oil, too, as a kitchen condiment. We may form an idea of the concentrated smell of this delightful oil when we consider that out of sixteen kilogrammes of garlic only ten grammes of oil are obtained!

Solution of Ammonia, the so-called Spirits of Hartshorn, and Ammonium Carbonate, in spite of their

pungent smell, also play a not unimportant part in the perfume factory. They are used in the manufacture of smelling-salts, and the odour of snuff is due principally to Ammonia. Besides this snuffs are rendered aromatic by other sweet-smelling constituents. Acetic acid, too, is employed in the perfume factory, and its property of dissolving ethereal oils is made use of to prepare perfumed vinegars.

CHAPTER XI.

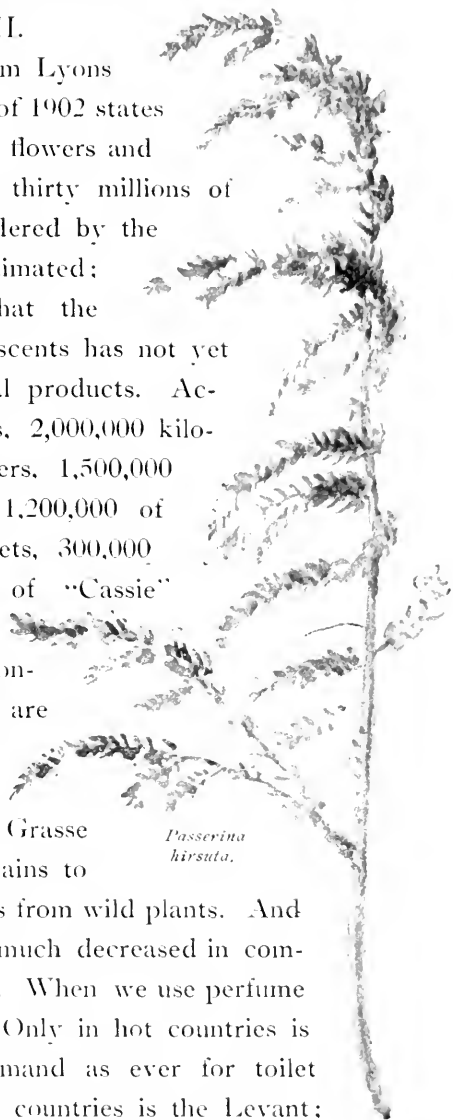
Ethereal oils act as poison if they are taken internally in too large doses, or continually. Hence the harmful results consequent upon the abuse of many liqueurs are caused not only by the alcohol which they contain, but also by the volatile oils with which they are flavoured. Eau de Cologne is equally dangerous if drunk. It is not uncommon for a doctor to discover by accident that a secret habit, on the part of his lady patients, of drinking Eau de Cologne, is the cause of puzzling symptoms. Volatile oils take oxygen from the air and thus go through a process of oxydation. Many of these oils oxydise very quickly and the more minutely they are dispersed in the air the more rapid is the process. Light and damp further this process, which gives rise to gaseous ozone in the air, or liquid hydrogen superoxyde which is very similar in its effects. To these is to be ascribed the stimulating effect on the respiratory organs which alcoholic solutions of volatile oils have when evaporated in a room. This effect is produced especially when those

volatile oils, which chemists class as Terpene, are dispersed in the air, because they oxydise the most rapidly. It is physiologically interesting to test the susceptibility of our sense of smell to perfumes. A few milligrammes of musk are sufficient to scent even a well-ventilated room for years. We smell this musk, and yet there can be only an infinitesimal quantity in the air which surrounds us. Experiments made by Passy, with alcoholic solutions of strong smelling substances, have proved that the five-hundred-thousandth part of a milligramme of Vanilla is sufficient to appreciably perfume a litre of air. The same effect is obtained by five thousandths of a milligramme of camphor: five millionths of a thousandth part of a milligramme of artificial musk sufficed to be perceived by the olfactory nerves. Expressed in figures this would be: 0,000,000,000,005 of a gramme: and yet the susceptibility of our organs of smell is considerably inferior to that of many animals.

In their principal chemical constituents ethereal oils show no great complexity. The elements carbon and hydrogen enter into them all: oxygen is generally present in larger or smaller quantities and sometimes nitrogen or sulphur. But simple as this may seem at first sight, we find it to be more complicated when a closer investigation is made into the constitution of these substances. We owe to the works of the chemist Otto Wallach, of Göttingen, a further, yet not complete, acquaintance of the subject. But only those who are versed in the whole range of Chemistry will be able to follow the scientific treatise on this question.

CHAPTER XII.

A communication from Lyons to the "Chemikerzeitung" of 1902 states that the yearly turnover in flowers and etherial oils at Grasse is thirty millions of francs. This sum is considered by the initiated to be over estimated; nevertheless it proves that the manufacture of chemical scents has not yet injured that of the natural products. According to official reports, 2,000,000 kilogrammes of Orange flowers, 1,500,000 kilogrammes of Roses, 1,200,000 of Jasmine, 400,000 of Violets, 300,000 of Tuberoses, 100,000 of "Cassie" (Mimosa), 60,000 of Reseda and 50,000 of Jonquils, besides other plants, are annually used at Grasse. Besides this great numbers of workers leave Grasse every year for the mountains to distil the coveted essences from wild plants. And yet the use of scent has much decreased in comparison with former years. When we use perfume now it is in moderation. Only in hot countries is there still as great a demand as ever for toilet scent. Chief among these countries is the Levant; but the ancients far exceeded even the orientals in their use of scents. What Pliny tells us about Lucius



*Passerina
hirsuta.*

Plocius is characteristic of those times. This Lucius Plocius, whose brother Lucius Plancus had twice been Consul, was proscribed by the Triumvirate and fled. He concealed himself in the neighbourhood of Salernum, where, however, the perfume he diffused betrayed his presence. He was put to death, and Pliny, annoyed by the excessive use of perfumes so prevalent at that time, relates this not without a certain satisfaction. We can hardly imagine anyone reeking with oils and unguents now-a-days as was often the case in ancient Greece and in the Levant. We have a decided aversion to greasy hands and therefore clean them as soon as possible. We still tolerate oil and pomatum for the hair, but these things are being replaced by alcoholic extracts, whereas the ancients anointed themselves exclusively with perfumed oils. The first liquid scent of the kind we now use is said to have been produced by Mercurio Frangipani, who made an extract with strong alcohol, from a powder of spices and musk invented by his ancestors. This same Frangipani belonged to a Roman noble family, which in the twelfth and thirteenth centuries had distinguished itself in the feud between the Guelfs and Ghibellines. That the weakness for perfuming one's person was inherited in this family is shown by the fact that in France a descendant of Frangipani, Marquis de Frangipani, Field Marshal under Louis XIII, introduced a kind of perfumed glove, known as "Gants à la Frangipani".

The Greeks learnt from the orientals to anoint their bodies with scented oil. Pliny without further

question, attributes the invention of sweet-smelling ointments to the Persians. It is said that there were no less than forty ointment preparers in the retinue of Darius, when it fell into the hands of Alexander. Pliny tells us that among the booty taken at that time was the ointment chest, adorned with gold, pearls and precious stones, in which Alexander kept the works of Homer, so that, as he said, the most priceless work of the human mind might repose in the most costly case. In Greece the use of sweet-scented ointments was considered effeminate: the more manly athlete despised it and rubbed himself in the Gymnasium with pure oil.

Theophrastus, Pliny and Dioscorides relate how perfumed unguents were prepared in ancient times. The "aromata" were mixed with the oils and heated together. Theophrastus says, in the third century B. C., that the process had to be performed under water to prevent the "aromata" from burning. The oil most used was that of the Olive, strained and artificially bleached, and expressed from unripe fruits so as to be as colourless as possible. Besides this the oil from sweet and bitter almonds, Sesame oil, Castor oil and Oil of Ben were used. This last was particularly valued because it is scentless and does not easily turn rancid. It would be used now-a-days for hair oil were it not that it has practically disappeared from trade. The tree from which the Oil of Ben was obtained was called in ancient times Balanos or Myrobalanon ("Ointment acorn"). It is the *Moringa aptera*, a plant indigenous to Arabia and Egypt, whose fruits, the Ben nuts, yield the oil by expression.

Dioscorides, in his "Materia medica", a work probably written about the middle of the first century A. D., warns us against the least trace of water remaining in the oil, and recommends pouring the oil several times from one jar into another after these have been smeared with honey and salt. The salt extracts all the moisture from the oil. Myrrh and other Balsams, Cardamoms, Calamus, root-stock of Iris, perfumed flowers and fruits and sweet scented herbs were used to give their "aromata" to the oil. The fact that animal fat could be impregnated with perfume was also known. Rose ointment seems to have been universally used, and Dioscorides describes its preparation also. Gum and resin were added to the ointments to colour them, and also, as was said, to fix their scent. Many unguents were coloured with "Dragons' blood", the blood-red resin of the Dragon tree, (*Dracaena Draco*), or with Anchusa, the same colouring matter which we obtain from the root of *Anchusa tinctoria*, our Alkanet. This latter was also recommended for colouring the Rose oil. The variety of unguents became greater and greater. One single ointment would contain a large number of ingredients. The Egyptian ointment "Metopium" was made from bitter almonds with the addition of "omphalium, cardamomum, juncum, calamum, mel, vinum, myrrham, semen balsami, galbanum, resinam terebintham". As far as the meanings of these names are known today this ointment therefore contained, besides the oil of bitter almonds, the oil of unripe olives: the volatile oils of Cardamom, of the sweet-scented Andropogon grass and of Calamus; honey; wine; the

Balsam of the North African tree, *Balsamodendron myrrha*; "Balsam seeds", that is to say the pea-sized fruits of the Arabian tree *Balsamodendron giliadense*; the gum-resin of a Persian umbellate, *Ferula galbaniflua*; and lastly the turpentine of the Turpentine-Pistachias. We can form some conception of the scent of this ointment; it must have smelt principally of bitter almonds and Balsam. These ointments were obtained from many different places; from Egypt, Delos, Mendesium, Corinth, Cilicia, Rhodes, Cyprus, and later from Naples, Capua and Praeneste. They varied constantly according to taste and fashion. Some of these ointments were very expensive, and afforded work to a whole army of preparers and vendors. In the shops of the ointment-dealers idlers lounged about. Shady spots were chosen for these shops so that the ointments, which were kept in jars of lead or stone, might not suffer from the heat of the sun. The stone, which we call Alabaster, was much worked for these vessels, but as Rheinhold Sigismund seeks to prove in his book on "aromata", the ancient word Alabastron appears to have referred more to the shape than to the material of the ointment jars.

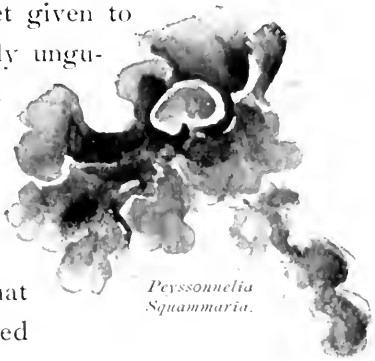
The abundant information given us by Athenaeus shows to what excess perfumed unguents were used in Greece. He relates that the Sybarites of Athens anointed each part of their body with a different ointment. Egyptian unguents were used for feet and thighs, Phoenician for jaws and chest, Sisymbrium unguents for the arms, Amaraeon unguent for hair and eyebrows, and Serpyllos unguent for chin and neck. Imagine the scent of a human

being anointed in this manner! For the Amaracon unguent smelt of Marjoram, the Serpyllos unguent of Thyme, the Sisymbrium of a Mint, the Egyptian and Phoenician of bitter almonds and Balsam. A veritable perfumer's shop! Athenaeus, in his Symposium, tells us further that Demetrius Phalereus not only anointed his whole body, but also dyed his hair yellow in order to look more attractive. At banquets they used to anoint their heads so that the wine should not affect them; for when the head is dry, so said Myronides, the fumes ascend. Hence, also, the use of wreaths which were thought to insure the wearer against intoxication by keeping the head cool, and to prevent headaches. Possibly the Ivy wreaths used in earlier times might have served this purpose, but hardly the later ones made of sweet-smelling flowers. For these were woven of roses, lilies, or "violets" (wallflowers or stocks), and also frequently sprinkled with perfumed unguents by attendants. We read in this Symposium of Athenaeus that at the showy processions of King Antiochus Epiphanes in the grove of Daphne numerous women walked about with gold vessels from which they sprinkled the crowd with perfumes. The same king, who was later called in joke Epimanes, that is to say the Lunatic, used to appear in the public baths when the populace was assembled there, and anoint himself with costly oils. Once someone said to him: — "How fortunate you are, O King, to be able to use such sweet-smelling unguents, and to diffuse such a pleasant perfume everywhere". Antiochus made no reply, but next day, after the bath, he had a large jar of myrrh poured over the man's head.

Others now wallowed in the oil which had been spilt, many slipped and fell, among others the king, which evoked universal hilarity. This Antiochus must have been very eccentric indeed, for even his gifts were peculiar in the extreme. He would present dice to one man, dates to another, or gold to a third.

It is said that the Lacedaemonians drove the unguent-dealers and the dyers out of Sparta, because the former spoiled good oil and the latter robbed wool of its original purity. Lycurgus and Socrates protested against perfumed ointments, but with as little effect as did the two Censors, Publius Licinius Crassus and Lucius Julius Caesar, later in Rome. Pliny informs us that they issued an edict in the year 189 B. C. prohibiting the sale of "exotic" unguents.

The hair and clothes of Roman ladies were perfumed with such strong scent that, according to Pliny, it could be smelt at a distance. This was all the more foolish, he says, in as much as others benefitted more by this expensive luxury than did those who paid for it. Plutarch also laments this extravagant use of unguents. He relates how, at a banquet given to Nero by Salvius Otho, costly unguents flowed from gold and silver pipes on all sides and quite drenched the guests. Juvenal, in his Satires, makes sport of Crispinus, the favourite of Domitian, saying that even in the morning he diffused



*Peyssonnelia
Squammaria.*

more Cardamom perfume than two funeral processions. Petronius, in his "Coena Trimalchionis", gives us a very realistic description of Nero's times, dealing also with the passion for perfumes and the excessive use of unguents. Though the colouring may be vivid this picture is only in accordance with the customs then prevalent among the showy upstarts of those times. During the most luxurious and protracted banquets, at which the rarest dishes were served up dressed in the most skilful manner, the most varied surprises followed one another. Suddenly from the ceiling a huge hoop is let down, round which hang golden wreaths and flasks of perfumed essences. These are gifts for the guests. Towards the end of the feast the company becomes boisterous and the drunken Trimalchio conceives the idea of having the garments, in which he wished to be buried, brought in. He orders scented water to be fetched and a sample of that wine with which his limbs are to be washed. He opens a flask of Spikenard essence and sprinkles his guests with it, expressing the hope that this perfume may be as pleasant to him after death as it is in life. Petronius was one of the favourite authors of the eighteenth century: and about the middle of this century — as I understand from the introduction to Ludwig Friedländer's "Petronius" — the "Coena Trimalchionis" had already been translated six times into French. At the court of Hanover, in 1792, it was even performed at the Carnival by royal actors. By the wish of Queen Sophia Charlotte of Prussia Leibnitz had to describe this performance to the Princess von Hohenzollern-Hechingen, and he did so in a French letter on February 25, 1702.

From a biting epigram of Martial we are able to gather by what particular perfume, among other peculiarities, a popular boon-companion might be known at the time of Domitian — towards the end of the first century A. D.

“They tell me Cotilus that you’re a beau:
 What this is, Cotilus, I wish to know”.
 “A beau is one, who with the nicest care,
 In parted locks divides his curling hair:
 One who with balm and cinnamon smells sweet,
 Whose humming lips some Spanish air repeat;
 Whose naked arms are smoothed with pumice stone,
 And tossed about with graces all his own:
 A beau is one who takes his constant seat,
 From morn to evening where the ladies meet:
 And ever, on some sofa hovering near,
 Whispers some nothing in some fair one’s ear:
 Who scribbles thousand billets-doux a day;
 Still reads and scribbles, reads, and sends away:
 A beau is one who shrinks, if nearly pressed
 By the coarse garment of a neighbour guest:
 Who knows who flirts with whom, and still is found
 At each good table in successive round:
 A beau is one — none better knows than he
 A race horse, and his noble pedigree”.
 “Indeed? Why, Cotilus, if this be so,
 What teasing, trilling thing is called a beau!”

(Translation by Elton).

Never since those ancient days have perfumes been so extravagantly used, though at the courts of France

and England they were sometimes freely indulged in, as for instance in France at the time of the Renaissance, under the influence of the Italian artists with whom Francis I and Catharine de Medicis loved to surround themselves. Then people revelled in perfumed pastes, pomades and scented gloves. Cosmetics came into fashion and called forth quite a special literature on the subject. The fact that Diana of Poitiers retained the charm of youth to a great age, although she was married at thirteen to Louis of Breze, Grand Seneschal of Normandy, was ascribed to cosmetics, the secret of which Paracelsus had confided to her. The abuse of cosmetics during the times of the Valois still continued under Henry IV. Queen Maria de Medicis had among her retinue a "Racommodeur de visage", and she herself, as well as all her ladies of honour, even the very oldest, were quite plastered over with red and white. A reaction was bound to follow and under Louis XIII beautiful Anna of Austria re-introduced ointments to the favour of the court. Then came the "Pâtes d'Amandes" and the various "Crèmes" and "Rouges", which lent artificial colour to ladies' complexions. Louis XIV did not like cosmetics; so their use declined during his reign, but only to receive a renewed impulse during the "Régence". At this time specifics flourished which were supposed to ensure perpetual youth and beauty. The notorious Cagliostro received from the equally notorious Dubarry, and from other beauties, no mean sums for these specifics. In spite of this rouge was again less used under Louis XV, and "Rouge de Portugal en tasse" was of a less vivid colour. Yet the sale of rouge was still so

great that in the year 1780 a company offered the government five million francs for the monopoly of selling a rouge of a special quality. Even purple paint was tried in the gardens of the Palais Royal, and created a nine days' wonder in Paris. Towards the end of the century, under the influence of Marie Antoinette, these vivid colours vanished from the faces of the ladies, and the taste for strong scents disappeared at the same time; now the ideal became one of tender melancholy and modesty.

Thus cosmetics and perfumery acquired that refined tone which they still retain today. Under the Empress Josephine who, as a Creole, loved strong perfumes, there was a passing revival of the older style. Napoleon I himself used only Eau de Cologne which he sprinkled over his head and shoulders every morning.

Since the sixteenth century French taste in perfumes had had great influence among other nations; in the seventeenth century it became supreme, as did French fashions.

It was France and England principally who supplied the world with their perfumes. Only Eau de Cologne succeeded in surpassing these and attaining a world-wide repute. Germany has lately begun to take her place in the front rank, if not for "bouquets", at least for unmixed perfumes. The Leipzig products in this branch have succeeded beyond all expectations; and Germany is well to the front with her chemical products, which now play such an important part in perfumery. She also principally supplies the world with those antiseptics which prevent

putrefaction and decay and check the spread of noxious germs. As cleanliness increases, the use of cosmetics declines; for these are incompatible with that cleanliness upon which bodily health and beauty of complexion depend.

Under the Valois, when strong perfumes were in high favour, it was not usual, even at court, to pay any attention to personal cleanliness. A book published in 1644 entitled "Les lois de la galanterie française", deals with the "Luxe de propreté" which was then coming into vogue, and which consisted in washing your hands daily and your face almost as often!

The mountains were reflecting light and warmth from all sides on the flower plantations of Grasse. It was hot in the town; thick clouds of fine dust rose with each breath of wind, and the smell of sandalwood in the streets was oppressive; we suddenly became weary of wandering and returned to the north.



FIFTH JOURNEY.

CHAPTER I.

Since the beginning of the year unusually mild weather had prevailed all over central Europe, and many plants in the Rhine valley wore quite a spring-like appearance in the early days of March. The drooping twigs of the Willows were already clothed in tender green. The Cornel (*Cornus mas*) was decked with its yellowish flowers, and Crocuses, Snowdrops, Daffodils and Winter Aconites (*Eranthis hiemalis*) brightened the garden borders. With spring so far advanced and promising, it was difficult to decide on leaving home: and on the other side of the Alps we almost regretted our decision. For the trees were still bare, and only clumps of Primroses and white Crocuses held forth a promise of warmer days. The whole winter had been exceptionally mild and sunny in Southern Europe; but the vegetation

showed no sign of life yet. It was awaiting the moment, fixed by long heredity, when it should reawaken to life and activity. It was different in the north; there the low temperature of winter had affected the plants and induced them to sprout early. For frost sets up chemical processes in the plant which stimulate this activity. It is this which in the North is only too often the cause of the premature sprouting of our plants, after which late frosts or snow-falls destroy the shoots and buds which had been so carefully protected through the winter by their bud-scales. Experiments prove that certain chemical stimulants have the same effect on plants as frost. The Danish botanist, W. Johannsen, demonstrated this in the case of ether vapour, and many market gardeners are now applying the process to fruit growing. The plants are subjected to the ether vapour in special boxes for about 48 hours. In many cases, especially with the Elder, the most surprising results are obtained.

As in the plain of Lombardy, so at Genoa, the deciduous trees were all bare, and not until we reached Nervi was I able to forget the winter and rejoice that I had decided to travel southward.

It was late in the evening when I arrived at Nervi. The surrounding objects could no longer be distinguished, but the silhouettes of the Palms against the star-lit sky, and the perfumes which were wafted to us in the carriage, proved that we had been suddenly transported into a different climate.

Golden sunbeams streaming into the room through the openings in the shutters awoke me next morning

in the Hôtel Eden. Throwing wide the windows, I was enchanted by the sublime outlook over land and sea. For, though I have many times before beheld this scene, it never fails to make an impression on me and stir my inmost soul. How glorious is the world! And yet how dark can be the shadows that brood over it! Below me the garden was already in its spring splendour, and the whole earth was resplendent in festal attire; and beyond stretched the endless, sapphire-blue sea. Here was a profusion of colours: there a profusion of light. Among the dark-green Palms and Orange trees and silvery-grey Olives, gay Roses gleamed. The bright Camellia bushes, in the garden across the road, bore such numbers of blossoms that the place seemed sprinkled with purple.

We hasten down to the sea onto the splendid parade of which Nervi is justly proud. The waves still dash as of old against those rocks on which I had dreamt away so many hours in by-gone years: the old Saracen tower still keeps watch over the coast: and in the east lies the picturesque promontory of Portofino, bathed in blue and flecked with gleaming white hamlets sunning themselves on its slopes.

We, too, have come here to sun ourselves. We have been pining so long for more warmth, more light and more colour.

Very fair is this bay of Nervi with its fringe of ever-green gardens, its background of steep and lofty mountains, and the clear-cut promontory of Portofino standing out so proudly into the sea.

The marine parade at Nervi was widened a few years ago for the invalids who frequent it, and an iron balustrade erected. This is certainly an improvement. But I miss the old grey wall which harmonised so well, both in form and colour, with its surroundings. Many will rejoice that they can now reach the rocks easily by stone steps leading down to the sea from the parade. But one is no longer so secluded as in former years, when access to the rocks was more difficult. There are still, however, many unfrequented nooks, where one may be out of sight of the parade, with only the blue sea in front, flanked by the ridge of Portofino and the chain of snowy Alps. Here the sea becomes, as it were, a companion to whom one may confide one's joys and sorrows, for in its ever-changing moods it seems to share the feelings of one's heart. How often do we see it sad, wrathful or agitated, and then again, gentle and beaming with inward bliss, this ever-changing sea! Now it lies peacefully in its basin, its ripples caressing the rocks; and then it hurls itself against the shore, as though challenging the solid earth to open combat. How gloomy and terrible is this mighty element when it rages blindly 'midst the howling of the wind, dashing its waters up towards the clouds, as though threatening the vault of heaven; or when blood-red reflections tinge its crests, and deep chasms open between its billows. Man turns away in terror and rejoices to feel the solid earth under his feet. With the feelings of a child he calls her Mother, for can he not trust himself to her with entire confidence? It is seldom that she opens her chasms to engulf the children she has borne.

On the insecure vessels which ventured into the open sea in ancient times man was much more at the mercy of the waves than now. And we can understand the feelings which prompted Pliny to write as he did in praise of the earth. "Rightly do we call thee Mother, O Earth, for thou overwhelmest us with benefits. As the Heavens belong to the Gods, so art thou ours. Thou takest us under thy care from our birth, providest for our wants, retainest us under thy protection, and, when the rest of Nature forsakes us, thou receivest us back into thy maternal bosom. Blessed be thou, holy benefactress, doubly blessed, for thou permittest us to share in thy sacredness. For thou bearest our memorials and inscriptions, and dost perpetuate our names far beyond our short span of life. Water falls upon thee as rain or hardened into hail; it washes up in waves and rushes back in mad torrents. The air condenses into clouds which burst in storms over thee. But thou, O Earth, remainest ever kind and indulgent. Ever ready to minister unto mortals, thou permittest untold wealth to be wrested from thee or often squanderest it upon us unasked. How many are the perfumes which thou diffusest: what delicacies thou providest and what ambrosial draughts! How rich art thou in form and colour! What we entrust to thee thou givest us back with interest. How many creatures dost thou nourish to be of service to us!" Carried away by his unbounded admiration for the munificent benefactress, Pliny goes on to say that the earth herself produces poisons only out of sympathy for men, for she would not have those who are weary of life endure a painful death by starvation. She therefore yields

secret juices, which, flowing easily over the lips, will put an end to life without disfiguring the body and without the shedding of blood, or any suffering beyond great thirst.

To the Orientals the sea is still "The Night of Abysses". A feeling of terror is also the dominating note in the descriptions of the sea which J. Michelet wrote in the middle of the last century. His book "La Mer", which he dedicated to the sea, was as much read in its time as were the other works of the great French historian and philosopher. The sight of a sea-storm arouses terror in Michelet, and it seems to him as though all Nature were participating in this feeling. He sees even the trees straining away from the sea to avoid destruction by the annihilating wind which blows with irresistible force across the measureless plain of waters. Michelet does not hear in the turmoil of the waves those soothing harmonies which appeal to the soul and have power to soften sorrow. He hears in it only the eternal menace of coming storms.

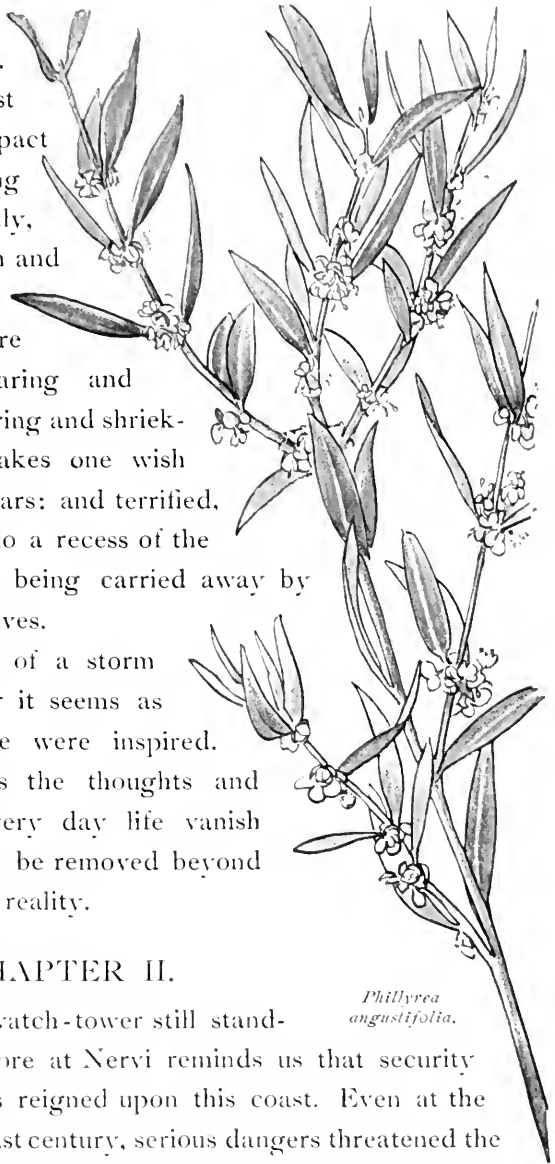
About the middle of last century Michelet spent six months in Nervi. He considered this bay one of the most sheltered and most beautiful in the world. One day he hurries down to the sea to witness a rising storm. There is no level beach here, only a small path on the dark rocks by the sea. This path runs up and down, often vertically over the water, at some height. The objects round can hardly be discerned because of the spray from the waves, and whirlwinds draw the thick veil ever closer. What can be seen is full of terror. Rough shattered walls of rock, peaks, sharp ridges and sudden rifts, all compel the angry waves to leap on high with incred-

ible energy and
 infernal turmoil.
 The rocky coast
 receives the impact
 of the thundering
 waves defiantly,
 shattering them and
 churning them
 to foam. There
 is a wild roaring and
 raging, thundering and shriek-
 ing, which makes one wish
 to stop one's ears: and terrified,
 one shrinks into a recess of the
 wall to avoid being carried away by
 the furious waves.

The sight of a storm
 elates me, for it seems as
 though Nature were inspired.
 At such times the thoughts and
 feelings of every day life vanish
 and I seem to be removed beyond
 the realms of reality.

CHAPTER II.

Yonder watch-tower still stand-
 ing on the shore at Nervi reminds us that security
 has not always reigned upon this coast. Even at the
 beginning of last century, serious dangers threatened the
 traveller. Petit Radel, "Chirurgienmajor du roi", travelled



*Phillyrea
 angustifolia.*

in 1812 from Lerici to Genoa in a boat. He tells us that he chose the sea route because of the fatigue entailed by the land journey. But he had reason to regret his choice later; not because he suffered from sea-sickness, but because of the dangers to which he found himself exposed. For he learnt during the voyage that Algerian freebooters and renegades were in the habit of lying in wait in the deep recesses of this coast and falling upon vessels suddenly as they rounded some headland. The sea journey from Spezia to Genoa occupied from twenty-four to thirty hours, and those who reached Genoa without mishap considered themselves lucky indeed.

It is difficult for us now, when the express train covers the distance between Genoa and Spezia in two and a half hours, to imagine in what a condition the means of communication were formerly along the Ligurian coast. Two Swedish noblemen, who travelled in Italy in 1758, describe their experiences on this part of the coast in the "Neue Nachrichten oder Anmerkungen über Italien und über die Italiener", a German translation of which was published in Leipzig in 1766 by "Bernhard Christoph Breitkopf & Sohn". They had engaged a vessel at Leghorn for themselves and their servants. It had been stipulated that the Padrone should take no other passengers. But in spite of this they found, when they came to embark, that the vessel was not only laden with goods but crowded with other passengers — Moors, sailors, and a Dominican accompanied by a doubtful looking lady. A storm compelled them to seek shelter in the harbour of Portofino, and there they had to spend their Christ-

mas holidays. Since the Padrone seemed to think the weather still unpropitious, and time was precious, one of the noblemen decided to walk to Genoa, following roads that were in some places no better than goat tracks. And yet the Via Aurelia had once led over the mountain of Porto-fino and further along the coast to Genoa. But it apparently existed no longer. It was Napoleon I who undertook to make a road on the eastern Riviera as he had already done on the western, generally following the track of the old Roman Road. This was at the time of the French occupation of Genoa, which lasted till 1814. The plans for the road were not, however, all carried out. For in a "Manuel du Voyageur en Italie", published in Milan 1818, we are told that between Genoa and Lucca there was only a path which followed the shore, or ran along the slopes of the mountain, and the various portions of the path were not connected, so that it was almost useless. It was not until the middle of last century that stage-coaches began to run on the road which was then completed. These were soon taken advantage of by strangers.

Those who travelled along this stretch of coast on these footpaths were enthusiastic about their beauty, the luxuriance of the vegetation, the profusion of golden fruit on the Orange trees and the spicy perfume of the ever-green shrubs. But the town of Nervi, it seems, created a different impression on travellers. The stage coach rattled for so long between the endless rows of houses that an Italian Abbé explained to his friend, Otto Speyer, who published "Bilder Italienischer Landschaft" in 1859,

that the place was called Nervi "Per chè dà ai nervi"! — because it gets on one's nerves!

Nervi is particularly well sheltered from the north, west and east, so that practically only southerly winds reach it. The parade, which is further protected from the north by high garden walls, is free from dust, and affords for invalids a shelter which is exceptionally good even for the Riviera. Other visitors to Nervi, who come merely for rest and change, complain of the limited number of walks round the place. And there is certainly no great variety, for even the ascent to the church of St. Ilario, beautiful as it is, opens up no new views. The panorama is still shut in to the west, north and east by the same high mountains which can be seen from the shore. The high road is certainly less dusty than those of the western Riviera, but not attractive to pedestrians after long drought. Thus we must fall back upon the shore whose rocks we never tire of visiting. We love to linger here till evening, when the sun begins to sink behind the Apennines beyond Genoa, and the headland of Portofino glows purple in its light, when every little hamlet on its slopes is touched with fire and reflects long streaks of gold across the sea. This is the hour of Titian colouring, when all things are bathed in rich gold, and seem rather to illuminate the sky than to receive light from it — the hour which awakens in the slumbering soul of the artist harmonies of colour that rouse him to achievements he is himself surprised at.

Adolf Stahr and Fanny Lewald have sat here on the shore, enchanted by the splendour of the scene before

them. Both travellers had come here by "Vetturino" in October 1858, and went to the Villa Gropallo. They wandered about its large estate charmed by the luxuriance of the southern vegetation. Then they seated themselves near a "picturesque and lofty pavilion, in a nook in the rocks close to the sea, where a small half-shattered boat, lying in the angle of a wall, close to the ruins of an old watch-tower, afforded a comfortable resting place". Here they dreamt away "some truly enjoyable hours, to be counted among the most blissful of our journey in this southern region so highly favoured by heaven". At their feet "the sea, glimmering and shimmering in the hot midday sun, sang its lullaby". Everything around them seemed to be slumbering. "Iridescent lizards sunned their graceful bodies as they slept among the perfumed herbs on [the old walls of the tower". In these happy musings it seemed to them "as though they were in communion with the great Mother of all Beings, who takes back into her all-embracing bosom each of the million children she has borne; ever modelling and remodelling the material of their organisms into new shapes and forms till the end of time."

Adolf Stahr could still call the grounds of the Hôtel Gropallo, now so much frequented by visitors, "a heavenly solitude of Nature". As late as 1865 Nervi is barely alluded to in the third edition of Baedeker's "Northern Italy". In this Guide the first inns mentioned on the road between Genoa and Spezia are at Chiavari. It took eleven hours to traverse this distance in the stage coach. Nervi was more fully described in the guidebooks

of the early seventies, when the present Grand Hôtel was opened as the Pension Anglaise.

CHAPTER III.

The Lemon trees, growing without any protection, are a better testimony to the mildness of the climate of Nervi than all the statistics given in the guide books. In this respect Nervi is little inferior to the most favoured spots on the Riviera di Ponente; on the other hand it has half again as many rainy days in the winter as they have. This can at once be seen by the vegetation, for the Camellias, which find the Riviera di Ponente too dry, grow luxuriantly here. The same applies to the Azaleas and Gardenias for they also require a certain amount of moisture in the air.

The cultivation of perfumed flowers has increased as much in Nervi as it has on the Riviera di Ponente. The Nervi carnations are especially esteemed and are sent to the North under the name of Genoese Carnations.

When wandering in spring among the Olive groves and gardens adjoining the high road we notice a perfume like that of the Sweet Pea, the "Pois de Senteur", (*Lathyrus odoratus*). This scent comes from the Broad Bean (*Vicia Faba*), which is much grown all along the Riviera. The seeds are eaten here unripe and raw, when they taste sweet like unripe green peas. In many districts of Germany the broad bean goes by the contemptuous name of "Saubohne" (Sow bean). And yet this plant deserves to be treated with more respect, for it is one of the most ancient of cultivated plants, so old that its

origin is not known. Its cultivation dates from prehistoric times. Certain kinds of broad beans were used, even in ancient times, as food for cattle; and from others meal was made which was often mixed with the flour of cereals. The bean has played an important part in mythology. The seeds were an emblem of death because the black spots on the white flowers were interpreted as

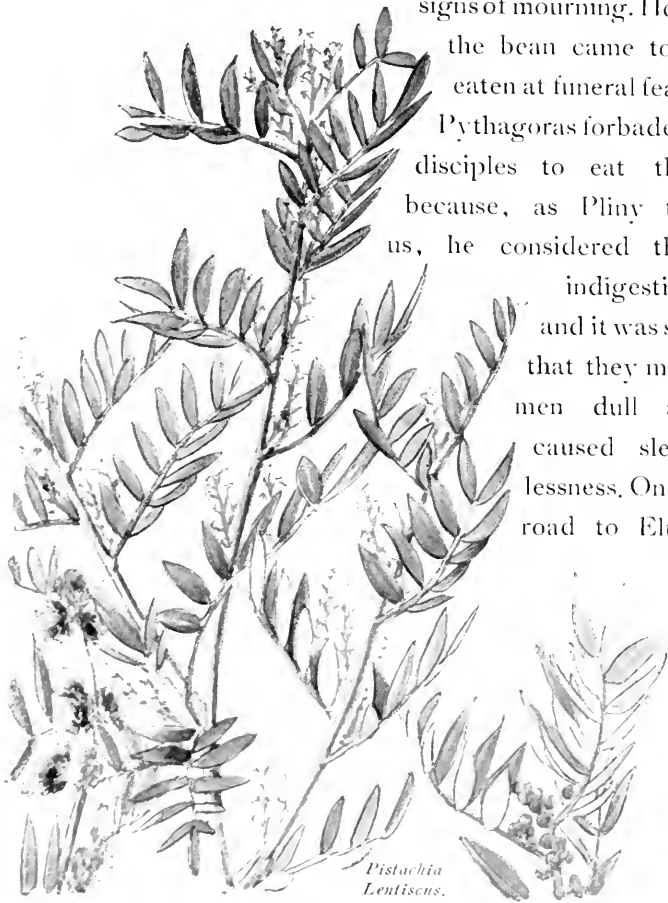
signs of mourning. Hence

the bean came to be eaten at funereal feasts.

Pythagoras forbade his disciples to eat them because, as Pliny tells us, he considered them

indigestible,

and it was said that they made men dull and caused sleeplessness. On the road to Elusis



*Pistachia
Lentiscus.*

stood a temple dedicated to the Bean-God, Kyamites. At the festival of the Lemurs — the wandering spirits of wicked mortals — it was the custom to throw black beans over one's head to protect oneself and one's relations from the persecution of these wraiths. Soup prepared from the meal of broad beans was offered to various Deities. French beans were offered to them at the time of the Bean Feast, the *Calendae Fabariae*, which was celebrated in June. In lawsuits white beans were used to signify acquittal, and black ones for condemnation of the accused. Broad beans have been found in Egypt, in a tomb of the Twelfth Dynasty, which reigned about 2,000 B. C. Schliemann also dug up beans at Troy.

None of the customs of antiquity relating to the bean can possibly have applied to our Scarlet Runner (*Phaseolus vulgaris*), since this only reached us after the discovery of America. For this reason the old name "Bohne" only applied in the German language to the broad bean, and the name "Buffbohne" was used when it became necessary to distinguish it from the new American "Runner". Among the Greek peasantry the broad bean is still the commonest article of food. The meal prepared from this bean was recently much advertised. For bean flour is, next to lentil flour, the principal ingredient of "Revalenta Arabica", which was introduced from North America and sold at a high price as an invalid food and remedy for all sorts of complaints. The name was formed by inverting the first two letters of *Erva Lenta*, really *Ervum lens*, the name of the Lentil.

The plant which grows in such masses below the marine parade at Nervi, with tufts of dark green leaves sprouting even from last year's dried up inflorescences, is *Inula viscosa* (Fig. p. 239). It is a weed which cannot be overlooked as it intrudes everywhere. The Ligurians call it "Nasca" and attribute various healing properties to it. The leaves, when bruised, emit a strong aromatic odour. By this smell and the stickiness of all its parts we recognise it as the real "Alant". The peasants use the leaves principally as a remedy for viper-bite. In many districts Inula is put into wine to improve its keeping properties. On the rocks and walls here we also see the lovely, silvery-grey, bushy *Cineraria maritima*, (Fig. p. 77). The large handsome pinnate-lobed leaves owe their silvery appearance to their thick hairy covering. Cineraria produces bright yellow flower-heads in the summer. The plant is much used in our own gardens for forming a light border to gay flower beds.

Many different plants are overgrown by the *Smilax aspera*, (Fig. p. 387) on the coast at Nervi. Its berries are generally green in the spring, but in particularly warm and sunny spots some of them are already turning red. Occasionally the Smilax will climb to the top of a high tree and festoon it with evergreen garlands. It clings very closely to other plants, and this may have given rise to the legend that the Nymph Smilax was changed into this climber when she died of love for the youth Crocos.

Pines and Pittosporum stretch out towards the sea above the high garden walls which border the marine

parade, and Ivy trails over them. These plants are not injured by the salt spray. But many other trees are so much injured by it that they appear to be shorn off at the level of the wall. Many cheerful villas and summer-houses are seen from the shore gleaming amongst the dark foliage of the gardens. They add life and interest to the scene. Beyond the Hôtel Eden is the Villa Clementine, now a Convalescent Home for patients of small means. The invalids in this home, founded and supported by Gräfin Gräben, are also nursed by her under the name of Sister Selma. Thus does this philanthropic institution fulfil its noble mission!

CHAPTER IV.

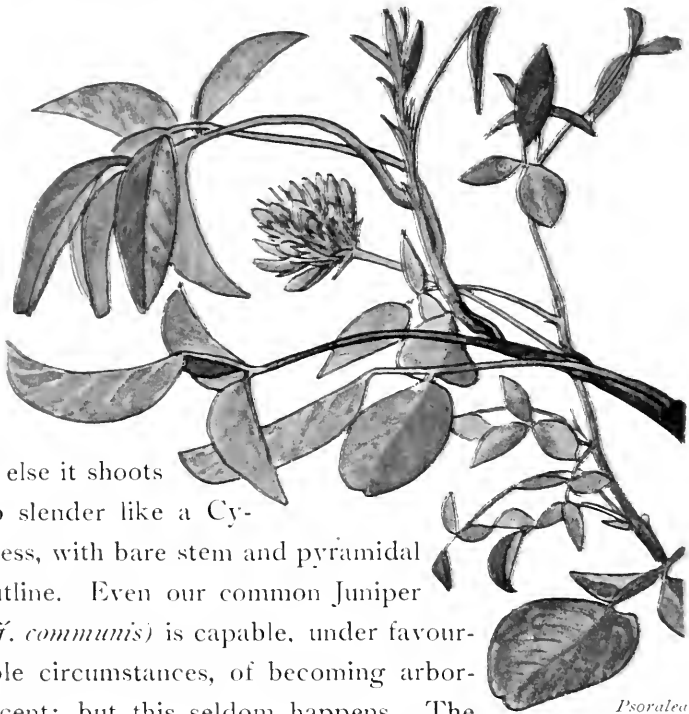
On a clear, sunny morning in the beginning of March we decided upon an excursion to the ridge of Portofino. Taking the train to Camogli we then proceeded to Ruta by the beautiful road which commands ever widening views over the Gulf of Genoa. At Ruta we clambered up the path leading south along the ridge of the promontory. Here the view suddenly extends to the far distance embracing both the bays which the Monte di Portofino divides. Towards the west the luxuriant green coast stretches away in gentle curves closely hemmed in by the Apennines. There appears to be but one town on the shore between us and Genoa. Beyond lies the Riviera di Ponente where the snowy tops of the Maritime Alps float in the green-blue sky. To the east one bay succeeds another fringing the shore. Here the Apennines are bolder, rising higher and higher, ridge above ridge,

and culminating in lofty summits sprinkled with fresh snow. In the misty distance beyond Spezia rise the rugged peaks of the Apuanian Alps, still shrouded in white.

At the northern end of the promontory, on which we now were, nature still wore a rather wintry aspect. Most of the shrubs and trees were bare. A few *Arbutus* (Fig. p. 37), Tree Heaths (Fig. p. 175), and Evergreen Oaks (Fig. p. 363), reminded us that we were in the south. I was fortunate enough on this expedition to enjoy the company of my colleague Professor Otto Penzig of Genoa, to whom we owe an illustrated flora of the Riviera, (*Flore coloriée du Littoral méditerranéen*). He of course knows all the plants here, recalling some to my memory and giving me information about others. Unfortunately there was so little as yet in flower that we saw scarcely anything except Primroses and Crocuses. The grey shrub growing in great quantities on the slopes here and showing only last year's withered inflorescences, is *Helichrysum angustifolium*. It smells just as strong as the *H. Stoechas* which we found on the Cap d'Antibes, and the foliage of the two plants is alike. The sole distinction lies in the withered inflorescence. Whenever we tread on this plant a waft of perfume rises.

We reached the summit of the mountain without realising the distance we had traversed. It must have been an hour and a half since we left Camogli. Our gaze now ranges free over a wide expanse, but ever returns to the soft blue summits of the Apennines, the distant snow of the Alps and the sunlit sea. The semaphore on the top of the hill is now falling to pieces. A new sig-

nal station has been built a little lower down. The ridge slopes steeply down to the south. We followed it to reach the old Abbey of San Fruttuoso which lies on the shore in a secluded inlet. In order to find our bearings we consult the map. A group of rocks, the "pietre strette", lying to the south-east, indicates the direction which we must take. Through these rocks runs the foot-path which then divides. The turn to the left leads to Portofino, that to the right goes down to San Fruttuoso. There is a sign-post here, so that you cannot mistake the path. Soon a few of the houses of San Fruttuoso appear, white among the dark green foliage, down by the bosom of the azure sea. This isolated spot is generally reached from the sea: but to miss the approach by land is to lose the most favourable impression of the place. For the path, as you descend from the heights, is incomparably beautiful and discloses a variety of ravishing prospects. Moreover one is surrounded all along by the most luxuriant "Macchia", and, early though it is in spring, we revel in the exuberance of the Mediterranean vegetation. The *Arbutus* (Fig. p. 37) is particularly abundant on this slope and reaches a considerable size. Next come the Ilex Oak (Fig. p. 363) and the evergreen Buckthorn (*Rhamnus Alaternus*, Fig. p. 367). The Tree Heath, now in full flower, shows white, and exhales its pleasant perfume. The Juniper (*J. Oxycedrus*, Fig. p. 245) also grows plentifully on this mountain side, not only in its shrubby form, but sometimes rising above the other vegetation as a tree. We are astonished to see it so finely developed. Broad and branching from the base it resembles an *Arbor Vitae*.

*Psoralea bituminosa*

or else it shoots up slender like a Cypress, with bare stem and pyramidal outline. Even our common Juniper (*J. communis*) is capable, under favourable circumstances, of becoming arborescent; but this seldom happens. The Leguminous shrub with yellow flowers which covers much ground here and there, is *Coronilla Emerus*, a plant common on the eastern Riviera. It may easily be distinguished from other yellow-flowered shrubs of the same family by its imparipinnate leaves and by the inflorescence which is usually a three-flowered peduncle. *Coronilla Emerus* differs also from its relatives of the Maquis in being unarmed. Almost as common on the eastern Riviera is another yellow-flowered Leguminous plant, *Cytisus triflorus* (fig. p. 131). This shrub is unarmed like the *Coronilla* just described: but it is twice as tall. It flowers much later, and has trifoliate, not

pinnate, leaves. We walked on among the familiar growths which we like so well: Rosemary (Fig. p. 371), Cistus (Fig. p. 83), the thorny Calycotome (Fig. p. 61), the Evergreen Rose (*Rosa sempervirens*), Lentiscus (Fig. p. 349), Lonicera, the climbing Asparagus and Smilax. Lower down the mountain Bramble begins to form impenetrable thickets. In this climate it keeps all its leaves through the winter, and thus looks green at all seasons of the year. *Ampelodesmos tenax*, a remarkably tall grass, with last year's inflorescence rising from the thick tufts, is common throughout the whole Maquis in this spot. It reminds us of *Gynerium argenteum*, the Pampas grass which adorns our gardens. In fact the two genera are allied. *Ampelodesmos* is so called from its ancient use in tying up vines. It is worthy of note that this grass occurs on the eastern Riviera only in a very few places for the most part projecting into the sea, such as Monte di Portofino, Portovenere, and the Island of Palmaria in the Gulf of Spezia. In San Fruttuoso this grass is the object of a special industry. Ropes of great strength are made from the leaves. These are first dried in the sun, then soaked in water and twisted together in a primitive fashion without further preparation. The fishermen on this coast make use of these ropes to drag their nets to land, and they stand the strain perfectly.

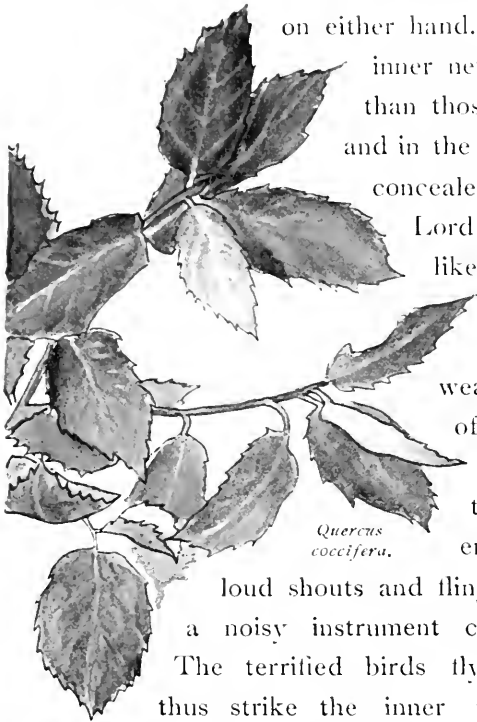
A fisherman came half way up the hill and offered us his boat for the sail to Portofino. We agreed to his proposal and he walked back with us. He was a well built youth with an intelligent expression, and may have been about twenty years old. His knowledge of plants

filled me with astonishment. And Professor Penzig, who published in 1897 a "Flora popolare Ligure", and who has collected the popular Ligurian names of plants, had only to mention any shrub or flower of the district when the young man pointed it out. But occasionally he would merely refer to a given plant as "mala herba", accompanying the remark with a gesture indicating aversion. These primitive men are much nearer to Nature than we are: they have lived from youth up in the open air, and their minds are stored with practical information. They have a much more lively interest in the natural objects which surround them than our educated people, whose knowledge is mainly derived from text books. Professor Penzig has invariably found among these natives a similar acquaintance with plants. Thus it had not escaped the notice of our companion that the Evergreen Buckthorn (*Rhamnus alaternus*) does not in all situations bear similar leaves. He explained to us that this shrub, when growing higher up on the mountain, has small leaves with serrate edge, but deeper down in the valley the leaves are broader with entire margin: the former variety they call "Sconno selvatico", the latter "Sconno domestico".

Suddenly, at the turning in the path, there appeared in front of us the unpretentious church of San Fruttuoso. We now followed a sunk path on whose banks were stretched out the green ropes twisted from grass. Many of these ropes lay coiled up ready for use. Then we passed through an arched passage between high stone houses, left the old Abbey behind, and turned into the primitive Osteria, the only one in the place.

Here we seated ourselves on a small terrace overlooking the sea, and ordered a frugal meal of eggs and fish. They brought in also a "Giardinetto". A dog, a cat and a fowl joined our party and took care that not a single scrap from the table should be wasted.

We were particularly interested in this fowl, for it was the first bird that we had set eyes on since we came to the promontory of Portofino. Professor Penzig, who for some time past has been President of the Genoese Society for the Protection of Animals, has told me what difficulties the Society has had to contend with there. Above all the priesthood has no sympathy with their aims, and gives no assistance whatever. This state of things is worst on the southern slopes of the Alps. There the slaughter of small birds is carried on so ruthlessly that only a small portion of the birds migrating from the North reach Italy. And here a legion of "Cacciatori" lies in wait for them. Professor Penzig owns a small property in the Val Camonica, in the Province of Brescia, to the north of Lago d'Iseo, and every summer he witnesses this annual barbarity. At this season there are at least 200 "Roccoli" in full activity in this one valley. These are small gardens specially designed for bird catching, and planted with Elder, Rowan and other trees and shrubs whose conspicuous berries attract the birds from a distance. Decoy birds, deprived of their eyesight and imprisoned cages, are concealed in the foliage. These prisoners sing, little suspecting that their melody is luring their fellows to destruction. The whole place is enclosed by nets, two rising side by side like a wall



*Quercus
coccifera.*

on either hand. The meshes of the inner nets are much smaller than those of the outer ones; and in the middle of this trap, concealed in a hut, sits the Lord of Creation, man, like a spider on the watch for his prey. When a flock of weary and hungry birds-of-passage have settled down in the attractive garden, the fowler startles them with loud shouts and flings out from the hut a noisy instrument called a "Diavolo". The terrified birds fly up obliquely and thus strike the inner net with narrower meshes; these are driven by the pressure through the wider meshes of the outer net. In this way each bird is caught in a sort of bag, and the proprietor of the "Roccolo" walks at his leisure from one prisoner to the next, twisting their necks. Professor Penzig has been able to examine the daily register of one of these bird-catchers; the number of birds caught by this one man averaged 3,427 per year for the ten years 1892 to 1901. We can from this realise how millions upon millions of migratory birds are thus destroyed. They fetch four centimes each, and find their way to the Italian markets. Is it not distressing to think that we care

for our songsters, and protect them during the nesting season by our laws, only that the Italian gourmand may use them to flavour his polenta? We must frankly admit that in the cultivated circles of Italy more and more voices are raised each year in favour of severer measures for the preservation of wild birds. May these voices soon succeed in making themselves heard! I have noticed with great satisfaction that the number of birds has increased in the Olive groves of San Remo and Ospedaletti the last few years. The Municipalities have restricted the ruthless shooting in order to gain the favour of the visitors.

CHAPTER V.

The hamlet of San Fruttuoso consists of only a few houses crowded close together on the steep slope. On a rock in their midst rises a square watch tower now used as a dwelling. Above the village the hill rises steeply, clothed first with silvery grey Olives, higher up with dark evergreen Maquis, and fringed on the skyline by Umbrella Pines. On both sides of the bay the rocks fall abruptly into the sea as though to shut this spot off from the rest of the world for ever. Only to the south can the eye range over the blue sea and lose itself in the distant sky which over-arches the high mountains. Here could one indeed live in the present day as an anchorite, "the world forgetting, by the world forgot", and then be laid to rest beside the ancient Dorias, — for in this lonely place the Dorias of Genoa were buried in the thirteenth and fourteenth centuries.

An old legend tells us that two disciples of Fructuosus, the priests Giustino and Procopio, put out to sea with the body of the Saint a few days after his Martyrdom, which took place during the reign of Gallienus in the year 259. After being tossed about on the waves for two days and two nights, an angel appeared to Giustino in a dream and indicated the place where they were to land: "Mons vero magnus, qui vobis prior apparabit, ibi est locus, sed draco pestifer moratur". A legend of this sort is hardly complete without a dragon! It represents the spirit of evil which endeavours to prevent holy deeds. In this case it may have been symbolic of the wild sea which made the landing on the steep rocky cliffs of the promontory so difficult. Next morning the boat, with the remains of the Saint, arrived at the foot of the mountain indicated by the angel. A storm was raging and the promontory was veiled in black clouds from which lightning flashed and thunder resounded. They saw the dragon also, but he seemed to be fettered, and was soon hurled into the depths by some unseen power. Thus they were able to land, and founded in this lonely spot the Abbey of San Fruttuoso di Capodimonte which soon became important. At the end of the tenth century it received rich donations from Adelasia, afterwards St. Adelaide, widow of the Emperor Otto. But even this secluded bay in the mountain side was not overlooked by the Saracens who plundered the Abbey later. Its importance, however, still increased and it was an Abbot of San Fruttuoso, Martino Doria, who in 1125 built the Church of San Matteo in Genoa and made it

dependent upon the Abbey. The number of churches under the control of the Abbey was constantly increasing, and in the course of the thirteenth century the Dorias chose San Fruttuoso as their burial place. Here Admiral Egidio Doria, the victor of Meloria, and other admirals of this illustrious house found their last resting place. This aroused the jealousy of the rival monastery of Cervara and resulted in the monastery of San Fruttuoso being closed by Pope Julius III in 1550 and its being handed over to the secular rule of the Dorias. Andrea Doria then had the tower built to protect the Abbey from the Corsairs. But the protection of the Dorias did not last long, so that all the monuments of ancient times would have disappeared had not the Abbey been cared for with pious affection by the fishermen. The offerings are but small which these men, both few and poor, have been able to contribute to their parish; hence the church looks a little dilapidated and the ashes of the Saint rest under an unpretentious altar, although they are considered the oldest relics in Liguria. A flight of stone steps leads down from the church to the ancient Abbey. A small quadrangle with old cloisters opens to the left, whilst in front is a vaulted chamber which contains the tombs of the Dorias. These also have suffered and only the slender pillars and arches, consisting of alternate black and white marble as the taste of the fourteenth century dictated, tell of former splendour. These monuments can no longer be said to be beautiful; but they afford food for reverent contemplation.

We now entrusted ourselves to the sea. Westward the sky had veiled itself in mist, and the signal station

on the ridge announced a change of weather. As though in anticipation of an approaching storm the sea heaved like the breast of a troubled sleeper. The waves rose and fell in rhythmic motion against the perpendicular rocks, their crests

silver-wat-
reflections like steel
tempered by fire,
the secret of fixing
of light upon the
was tuned to the
veiled woman, that rapt form who is accompanying the music of the "Surging Sea" with chords on her harp, would be appropriate on one of the ledges of these rugged rocks.

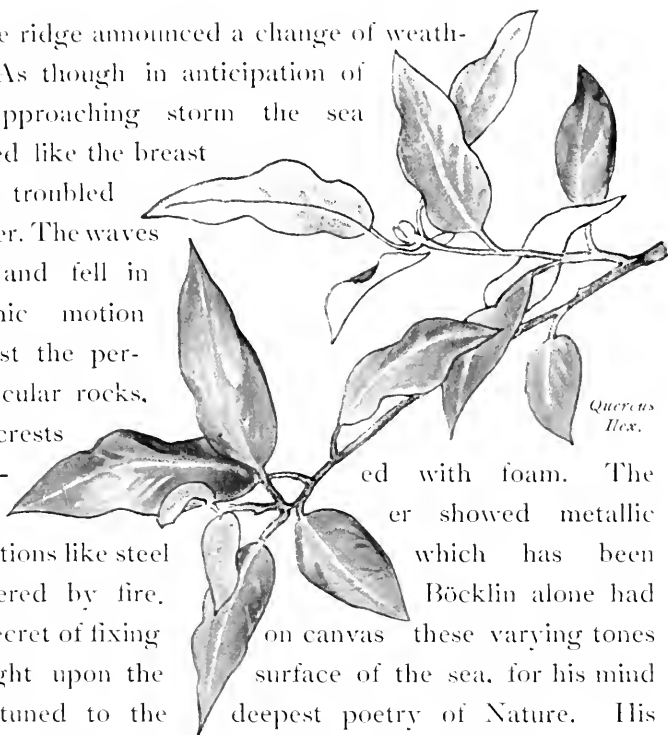
When a storm rages here,

"the Ocean's purple waves

Climbing the land, howl to the lashing winds".

The vertical cliff is bare for some distance, and higher up we see dead trees which have been killed by the salt spray.

The sea was deserted; we did not meet a single boat on the way. But we passed swarms of bluish crystal



*Quercus
Ilex.*

ed with foam. The
er showed metallic
which has been
Böcklin alone had
on canvas these varying tones
surface of the sea, for his mind
deepest poetry of Nature.

Medusae which were swimming in long shoals towards some unknown goal. What is the instinct that unites these creatures and causes them to keep together? Whither are they bound? Probably to the nearest shore on which they will be cast up tomorrow.

Not until we had sailed round the eastern point of the promontory and reached the harbour of Portofino, was the sea smooth. There is always a swell round this long promontory, and storms rage here with unwonted fury. Hence from ancient times the *Portus Delphini* has been regarded by the anxious sailor as a welcome refuge. Roman triremes, when on their way to Gaul, used to touch at the following ports in the Ligurian sea: — *Lunae*, *Portus Veneris*, *Portus Delphini*, *Genua portus*, *Portus Vadum Sabatium*, *Portus Maurici* and *Monaci portus*. Portofino is the ancient *Portus Delphini*; but according to G. Poggi neither of these names is derived as one might suppose, from “Delphine”. This investigator of ancient Tigullia seeks to prove that the origin of both these names is “*Dao-fin*”, the old name given to the whole ridge because it separated the peoples of Genoa and Tigullia. But the Romans had already changed the name of their military station on this ridge to “*Ad Delphinum*” perhaps for the sake of euphony. It was on the *Via Aurelia*, at the spot where *Ruta* now lies. G. Poggi, in his book, would have the present harbour at the foot of the ridge called “*Porto-fin*”, and not Portofino.

It is peaceful and idyllic in the little harbour today, and yet its waters have only too often been the scene

of bloody conflicts. For instance at the time of those murderous and fratricidal wars between Pisa, Genoa and Venice, when Guelfs and Ghibellines contended for this harbour which was of such strategic importance. On February 1st, 1312, the thirty Genoese and Pisan Galleys, bearing the Emperor Henry VII and his army to Tuscany, passed through Porto-fin; and G. Poggi supposes that Dante Alighieri must have been on board one of them. Conradin, King of Sicily, Odoardo, Duke of Parma, and Richard, King of England, also stopped here. From 1800 to 1815 French, English, Spanish and Austrians fought for the possession of this harbour, and Napoleon, when at last he felt sure of his prize, caused Portofino to be called after himself in a decree dated January 2nd, 1813.

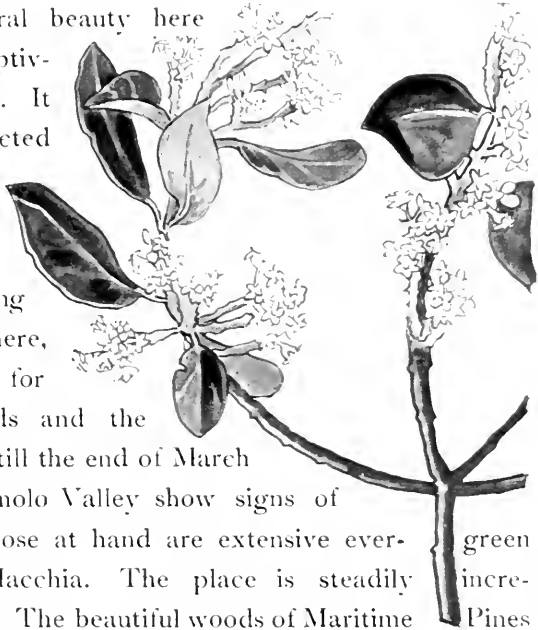
From the Madonna del Capo, whose statue stands on the extreme point of the promontory, we can see far along the coast eastward to the distant island of Palmaria. Santa Margherita, Rapallo, Zoagli, Chiavari and Sestri Levante succeed one another on this beautiful gulf. We are only an hour's easy walk from Santa Margherita, and we can overlook the road to it which winds along the hill shaded by old Evergreen Oaks and Pines. Half way to Santa Margherita, on a wooded slope, lies the ancient monastery of Cervara whose jealousy had once been so disastrous to the Abbey of San Fruttuoso. The young Genoese priest, Lanfranco, had founded this monastery in 1361. It enjoyed the patronage of his contemporary, Guido Settimo of Genoa — a friend of Petrarch's — who spent the last years of his life here

and was buried here. In its prosperous days Cervara could boast of many a distinguished guest. Saint Catharine of Siena visited this monastery and shortly afterwards Pope Gregory XI, who at the request of the Saint had resolved to return to Rome from Avignon. Then came Cardinal Farnesi, who was later Pope Paul III; then Don Juan of Austria, the victor of Lepanto. But in the meantime an unwilling guest stayed here. This was King Francis I of France who, after losing the battle of Pavia, had to spend a night here (February 25th, 1525) on his way to Spain. A quadrangular tower is the only part of this building which can lay claim to any great antiquity. This was erected by the Genoese as a defence against Pirates.

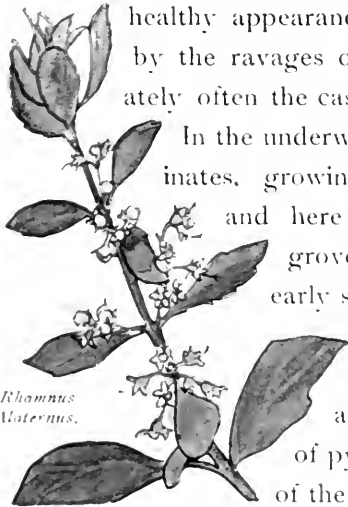
CHAPTER VI.

A few days later I arrived in Sestri Levante. At first I could not resist a certain feeling of disappointment. The whole of the scenery round the railway station was devoid of foliage and the road to the town led through an avenue of leafless Plane trees. Near the Grand Hôtel Jensch, it is true, there was a garden planted with southern evergreens, but the sea shore by the modest little town appeared to us somewhat bare. Until quite recently Sestri Levante has only been frequented in the hot season by Italian visitors for the bathing, but during the last ten years it has begun to rank as a winter resort and has not yet had time to array itself in those borrowed plumes in which the gardens of Nervi and the coast towns of the Ponente make such a show. But there

is much natural beauty here which soon captivates the visitor. It is less protected from the Tramontana than Nervi, and a fresh invigorating breeze blows here, which is good for nervous invalids and the weak. — Not till the end of March does the Gromolo Valley show signs of verdure, but close at hand are extensive ever-



green Pines refresh us with their healthy appearance. They are not disfigured by the ravages of caterpillars, as is unfortunately often the case on the Riviera di Ponente.



Rhamnus Alaternus.

In the underwood the Tree Heath predominates, growing to a remarkable height and here and there forming stately groves. It blooms in the very early spring and at that time forms the principal adornment of the woods. Here, too, there are woods composed entirely of pyramidal Cypresses on several of the mountain slopes. These have

a very sombre effect. Cypress wood was much valued in ancient times and a thick trunk represented a small capital. According to Pliny this is the origin of the custom of planting a Cypress when a daughter was born, to ensure her a dowry. There was hardly any timber better suited for ship building, and this wood, like that of the North African *Callitris*, was used to make boxes to protect clothing from moth. Sarcophagi for the rich, and idols were carved out of it. In the times of the Caesars the Cypress provided the wood for funeral pyres and, as it was thought to be indestructible, it was regarded amongst Christians as the "Tree of Life", the symbol of immortality. For the same reason it adorns the burial places of the Mohammedans and in our latitudes, where it cannot stand the severe climate, the Cypress has been replaced by the somewhat similar North American *Thuja occidentalis*, which has also been called Arbor Vitae the "Tree of Life". In the second half of the "Quattrocento" it was a common custom in Italian gardens to remove the branches at certain intervals so as to form terraces round the main stem. In his interesting work "Die Natur in der Kunst", Felix Rosen has referred to the fact that Cypress trees are frequently thus represented in old Italian pictures.

Sestri Levante possesses a priceless pearl in its casket, a jewel which every place on the Riviera might covet — the Villa Piuma. It adorns the end of the promontory that juts out into the sea like an island, and on which the oldest parts of the town rise, culminating in a cemetery at the summit.

I spend the morning regularly in the park of the Villa Piuma, Herr Jensch having lent me the key of the upper entrance. In the early morning I walk up through the old town and open the small gate in the old wall in a sequestered spot below the cemetery. And each time I enter the park by this little gate I am enchanted with the view. The splendid scene is disclosed as if by magic. In front of me steep precipices fall sheer down to the sea and dip into the crested waves. The edge of the promontory is shaded by a broad belt of Pine trees, which seem as though arranged by a master hand, so effectively do they adorn it. Agaves of a vivid green cling fast to the neighbouring slope. The wall close to the entrance is quite hidden under the rich growth of large-leaved Ivy and Smilax. It rises up to an old ruined castle near which the burial place lies. Out of the dark green foliage, dazzling white statues and crosses peep forth. In the foreground *Arbutus* (Fig. p. 37) *Oleasters*, Pines and Evergreen Oaks crowd upon each other, and steeped in light the trackless sea sparkles and shines in the background. In order to paint this picture the artist would have to dip his brush alternately in the light of the sun and the blue of the sea.

From the entrance broad steps lead down first through *Erica* bushes: then the view opens out over the eastern bay and the Monte Castello, where wooded heights end in the steep Cap on which stands the "Telegrapho". In the north-west the blue Apennines rise range beyond range. A light breeze blows from the open sea, stealing the perfume of the *Erica* on its way. We rest here a

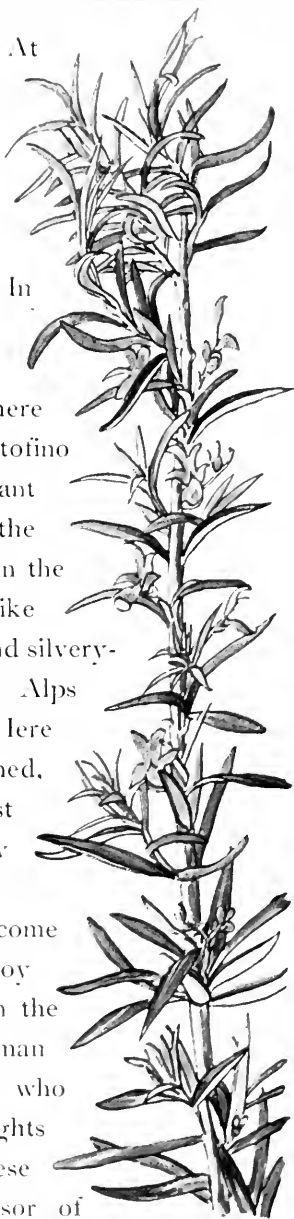
long time and let our gaze wander over land and sea. It is so quiet, so peaceful here. A fishing boat down near the foot of the cliff is scarcely rocked by the waves, and in it the fisherman lies sleeping. A shoal of Dolphins sport in the sun-flecked water. Do they too know that spring is near?

The path leads along the steep slope towards the point of the promontory. We are surrounded by the fragrant *Helichrysum* (Fig. p. 227) and the spicy scented "Nasca" (Fig. p. 239). With these are the shiny dark-green leaves of another plant, quite as strongly perfumed, the *Psoralea bituminosa* (Fig. p. 355), also typical of the flora here. Its peculiar aroma is like bitumen, as its name, Pitch Clover, indicates. It opens its small, clover-like flower-heads in June: the leaves, which closely resemble those of our clovers, were formerly sold together with all other parts of the plant as "Folia trifolii bituminosi", and much used in medicine.

We soon reach a saddle-shaped depression in the ridge, from which, over the grey foliage of the Olives and between Cypresses and flowering Peach trees, we could see a part of Sestri Levante against the background of the Apennines. Numerous paths converge here and lead in all directions over the promontory, intersecting here and there. We are now in a splendid natural Park, among representatives of the Mediterranean flora and with scarcely a single foreign plant. Old Oak trees and Pines rise above the Maquis. Here winter is forgotten, for not a single bare tree top offends the eye. The pure refreshing breeze from the sea sweeps along

the slope and inflates the lungs. At every turn of the road the outlook changes. To which of the many scenes shall the preference be given? As soon as we leave one spot we return to it for surely it was the most beautiful! In the end I decided in favour of a small projection at the south-western side of the mountain, where the whole west coast as far as Portofino is seen in a frame of luxuriant verdure. Down below through the trees the azure blue sea glitters in the full sunshine, streaked with gold like Lapis Lazuli; and beyond, misty and silvery-white, the snow masses of the Alps seem to hover in the clouds. Here I used often to sit, hither I returned, and from this spot I found it most difficult to tear myself away on my departure.

It is fortunate for those who come in search of health, and to enjoy nature, that the Villa Piuma is in the possession of an Italian nobleman whose heart is in his country and who is proud of its beauty and who delights to share it with others. The Marchese Piuma is a scholar and Professor of



Rosmarinus officinalis.

Mathematics at the University of Genoa, and lectures on the calculus. He spends the vacations only in his Villa at Sestri Levante, or at another estate in the Polcevera valley.

The feeling of gratitude, that every visitor to the Villa Piuma entertains for its owner, is increased by the memory of contrary experience in other places on the Riviera. And even at Portofino, near at hand, the traveller finds the gates closed and is confronted by notices in several languages forbidding his entrance. Of what avail is it that the estate is thrown open on certain days and at fixed hours. One may not be able to come again. The community should see to it that at least a few of the spots which command views should remain open to all. But everything about Portofino has been sold to foreign owners. It is only due to the modest statue of the Madonna del Capo, which stands on the east end of the promontory, that every free outlook from this spot is not enclosed. A narrow foot-path has had to be left leading to the Madonna, that the devotee may bring his offering of flowers. The owner of the plots of land bordering this path has therefore been compelled to build bridges over it and, with rare taste, he has painted these, as well as all his buildings, with broad black and yellow stripes!

In the neighbourhood of Sestri Levante the visitor is better off. He can enjoy full and uninterrupted views from all the roads that follow the coast at some distance above the sea. I used generally to walk in the afternoon either eastwards to the "Telegrapho", or in the opposite

direction over to Santa Anna. You cannot miss the way to the Telegrapho. Passing through an arched doorway in the main street of Sestri, and reaching the "Vico dell' Botone", you turn sharp to the left and follow the red-paved road that leads up between garden walls. You will only once be undecided, at a spot where the road appears to stop suddenly in front of a group of rocks. But it goes past these rocks into a thick Pine-wood. Here the Maritime Pine grows luxuriantly and the bushes of the Maquis form a thick undergrowth; even a few Cork Oaks have strayed here. New aspects of the sea and coast appear at every opening. The isthmus uniting Villa Piuma with the mainland is so narrow as to give it the appearance of a green island.

In order to reach the beautiful spot where stand the ruins of Santa Anna, which can be seen from a great distance, you have to follow the rail in a westerly direction and then turn into the valley that branches off inland. The path goes through a quarry by the side of a brook, and when in the wood it begins to ascend. It soon leaves the stream, only to turn back to it again, and at last reaches the plateau on which the ruins stand. Thence it is pleasant to walk on almost level ground to the spot where Cavi can be seen in the hollow of the valley. At the same time the eye can feast on the magnificent view of the deeply indented coast line which encloses the Gulf of Rapallo.

The views from the mountain road between Rapallo and Chiavari are very similar. This road is considered to be one of the finest in Italy, and rightly so as all

agree who have followed its windings on a clear, sunny day. It leads almost uninterruptedly through Olive groves, and consequently is equally beautiful at all times of the year. Time flew so rapidly on the walk that I hardly seemed to have been two and a half hours on the way from Rapallo to Chiavari. I met only a single motor car, so that my enjoyment of the natural surroundings was not marred by either dust or the smell of benzine. Those who wish to avoid fatigue should not walk further than from Zoagli to Rapallo. Zoagli is half way, and the mountain road running above the village can be reached by a short ascent from the railway station down by the sea. At the highest point of this mountain road a halt should be made, for indeed the view from here can be surpassed by few in the whole of Italy. It is so diversified, so full of light and colour, that it fills the heart, as if by magic, with sunshine that even many dark days in succession cannot quite obliterate.

The mountain road, which now connects Chiavari with Rapallo, coincides only here and there with the Via Aurelia. The latter generally ran at a higher elevation so that, if its tracks are followed, the views are still more extended. The old road is still used from Chiavari to San Pietro de Rovereto, where it becomes only a mule track and drops down to Zoagli between Olive groves. On the other side of Zoagli it appears again above the present highway and continues as far as San Pantaleone. Here, on looking down, the pretty little town is seen with its bright houses standing out

from the dark foliage, like pearls in a green velvet casket. As a matter of fact Zoagli owes her modest prosperity to real velvet; for from remote times the manufacture of "Veluti di Genova" has flourished here, and the velvet is still held in high esteem. From San Pantaleone the road continues to ascend to San Ambrosio where the highest point (646 feet) of the old Roman road is reached. There the Counts of Lavagna built a castle in order to command the district. The Chroniclers first mention this building in the year 1070. The Roman road then descends somewhat abruptly to Rapallo, which lies along the Via Aurelia, and can boast an antiquity of at least nineteen hundred years. Between Chiavari and Lavagna the Entella debouches into the sea. It carries down a good deal of water, which is surprising on this coast where the torrent beds are generally so empty that they are used as drying places for washing. Dante praises the Entella in the nineteenth Canto of the Purgatorio: "Infra Sestri e Chiavari s'adima una fiumana bella." — By going up the river we reach San Salvatore in about three quarters of an hour. The Basilica there, which was erected as a national monument, is worth a visit. But



Salvia horminoides.

what really induced me to undertake this excursion was interest in the founders of the church, whose names Schiller has made familiar to us from our youth up by his tragedy of the "Fieschi". They called themselves Counts of Lavagna. In the year 1244 Sinebaldo Fiescho, who as Pope bore the name of Innocent IV, laid the foundation of the Basilica. The fresco over the entrance represents him kneeling at the mount of Calvary. The large Rose window in the otherwise extremely plain façade is a highly artistic piece of work and well preserved. It is otherwise with the neighbouring Castle of the Fieschi. The alternate bands of light and dark stone, and the arches of its windows, show that the building was of the same date as the Basilica; but the architectural effect is destroyed, for the windows are walled up and the interior has been adapted to the needs of poor country people.

The nephew of Innocent IV, Ottobuoni Fiesco, whom the former raised to the rank of Cardinal-deacon under the title of St. Hadrian and who afterwards became Pope Hadrian V, is represented in Dante's *Purgatorio* as speaking. He makes him praise, in the words quoted above, the river of his native district, — the Lavagna, now called Entella. "Between Chiavari and Sestri a fair river rushes down, from whose name my family derives its honourable title". As to the avarice with which Dante charges Ottobuoni, the royal translator and commentator of the "*Divina Commedia*", Philalethes, could not find any historical confirmation of it.

The power of the Fieschi began to decline about the year 1000. They had become dependant upon Genoa

and removed thither. In Genoa the family flourished anew, attained considerable importance and acquired great riches. They owned many palaces, and in the Cathedral of San Lorenzo they possessed a special Chapel and burial vault. In the thirteenth century the family split into two branches, the Savignone and the Toriglia. To the first family belonged Gian Luigi il Grande, who had entertained Louis XII of France in his palace "Via Late". From this Gian Luigi was descended Sinebaldo, and from his union with Maria della Rovere, niece of Pope Julius II, proceeded that Gian Luigi, the third of this name, who placed himself at the head of the conspiracy against the Dorias. It is well known that some words of Rousseau's, to the effect that this Fiesco was one of the most remarkable characters in history, prompted Schiller to make this man the subject of a tragedy.

If you make excursions inland from Sestri Levante in the early spring you will be struck by the backward appearance of the vegetation, especially in the higher regions of the Apennines. For there winter is not over till May. Nevertheless one ought not to miss the drive to Bracco on the road leading from Sestri Levante over the Apennines to Spezia, for it commands a number of charming views over the sea and coast.

Here we find ourselves again on the old Roman road that connected Luni with the Genoese coast. It divided on the top of the mountain at the present village of Mattarana, one branch running down to the sea at Moneglia through the Val di Deiva, and the other leading past Bracco to Segesta Tigullorum, the present Sestri

The successors of the Romans here at first made use of the Roman roads, near which they built their castles; but gradually they allowed these roads to fall into disrepair and did not make new ones. So that at the beginning of the eleventh century the means of communication between the different villages were so interrupted that traffic along the coast was confined to the sea.

Before the finely situated Villa Bertollo is reached on the road from Bracco you look down into both bays which are separated by the pineclad Monte Castello. The bay of Moneglia can also be seen beyond a spur of the hill, and in the far distance, when it is clear, the most northern point of Corsica is visible across the blue sea. In the Petronio valley to the west the groups of grey houses of Casarza, Masso and Castiglione form charming scenes. These places lie along the road to Borgotaro which there joins the railway to Parma. To the north and east tower the giant masses of the Apennines. Their heights are bare, but delicately tinged with different shades of pearl-grey, orange and pale blue. The strong contrast of light and shade enhances the effect still more, and at the same time throws them into bold relief, bringing the whole into sublime harmony.

CHAPTER VII.

A well known authority on Swiss Botany, H. Christ, author of "Das Pflanzenleben der Schweiz", considers the Riviera di Levante one of the most attractive districts of Italy. The eastern part of it, between Sestri Levante and Spezia, especially charms him, not only by

its beauty, but by its primitive character.

He admires, above all, the rocky cliffs rising abruptly from the sea, with their frequent contortions and their varying mineralogical constituents.

These include almost every imaginable kind of rock, from porphyry, serpentine and granite rich in mica, to pure quartz rock. In consequence of a lower temperature and increasing humidity a good

the Iberian-maritime region here. Thus *Quercus coccifera* (Fig.

many plants of begin to disappear here. Thus *Quercus coccifera* (Fig. p. 359), *Globularia* *Alypum* (Fig. p. 207) and the

Lavateras (Fig. p. 271) which we meet with so often on

the western Riviera, are not to be found. Yet *Pistachia* *Lentiscus* (Fig. p. 349) grows at Chiavari and *Euphorbia*

dendroides is seen at Cinque Terre forming bushes the height of a man; while well developed plants of *Cistus monspeliensis* (Fig. p. 83) are to be found in certain spots.

But it is chiefly the variety and interest of its ferns that Mr. Christ praises in this district.

The coast of the Gulf of Spezia is included in the Riviera di Levante; the broad bed of the river Magra, which flows into the sea beyond Capo Corvo, being regarded as its eastern limit. In ancient times this river separated Liguria from Italy. The Maquis can be traced as far as this. But the shelter from the north wind has



*Scelaginella
denticulata.*

decreased so considerably, and the number of deciduous trees is so great, that one can hardly consider those places situated to the south east of Sestri Levante as good winter resorts. On no account could they be recommended to those suffering from chest complaints, who are in search of a milder climate in the winter and like to be surrounded by evergreen shrubs and trees.

The Nature lover also should postpone his excursions to the eastern part of the Riviera di Levante until late in the spring, that he may then see the beautiful country in its full glory. This applies especially to the Cinque Terre, that fantastic realm of rocks which is well worthy of a visit.

The Cinque Terre derive their name from five stony districts between Levanto and Porto Venere. These are situated in the narrow indentations of the coast and rise abruptly from the sea-shore towards the mountains. They are only a kilometre apart, but sky-high precipices tower between them, running out into the sea and forming insurmountable barriers, so that it takes an hour to get from one place to another. In making the Via Aurelia, these invincible obstacles had to be avoided, and in order to pass this strip of coast the road was carried over the heights. Modern science at last tunnelled these rocky masses by means of explosives, and thus brought into communication people whose only intercourse with each other and the outside world had previously been by sea. Stormy weather isolated them completely, for landing at these precipitous cliffs was then impossible.

The rocky chasms on which these places rise are so narrow that the train, when it stops, often has both ends in the tunnels. You are under ground almost the whole of the distance between Sestri Levante and Spezia, and one cannot help admiring the marvellous skill which has opened up communication with this district. If you leave the train at any of these stations, say Riomaggiore, and emerge from the tunnel you will see before you a town, grey with age, built of unhewn stone, rising steeply up the mountain side and ending in walled terraces on which the vines grow. Sometimes it looks as if these could only be reached at the risk of life, as of yore those grapes in the Campagna which ripened on high trees. The wine pressed from the grapes was celebrated of old. It is sweet and heavy, darker and more fiery than Orvieto, though very like it in taste and colour. It is put into flasks, and as it will keep only a limited time, must be consumed without any great delay. The grapes literally roast in the sun on the steep cliffs and are consequently very sweet. In autumn they are brought down to the villages and spread out on the flat stone roofs of the houses, where they almost become raisins before they are pressed.

If you desire to get the best impression of this district it is well to postpone your visit until the autumn when the vintage has commenced and the women, clad in picturesque costumes, carry vessels filled with grapes on their heads down the steep slopes of the hill. In the early spring the vines still lack their foliage, and the scene is not pleasing to the eye. The poverty of the

place, too, is then more apparent as it is not sufficiently concealed by the wild splendour of surrounding nature. The inhabitants have, as yet, but little experience of strangers; they regard them with mistrust and do not even beg of them.

From Riomaggiore, the last town of the Cinque Terre, you cross the mountain to Spezia. The outlook over the deeply indented gulf, suddenly disclosed to view, is glorious. The jagged peaks of the precipitous Apuanian Alps are white with dazzling snow: and the coast of the gulf is still bare. We must return hither at a later season of the year.

CHAPTER VIII.

On the evening of the next day I arrived at San Remo. The starlit sky enticed me into the open air at a late hour. Close by the gate of the Hôtel Royal I found myself once more under the stately Date Palms of the garden, and the impression was renewed which these majestic forms of vegetation always leave upon my mind. I had missed these trees of late, yet scarcely knew how much I missed them. Here in the garden they rose like slender pillars against the sky line, illuminated on one side by the bright lights from the windows of the hotel. High over my head their fronds formed intersecting arches, like those in the roof of a Gothic cathedral. Above them stretched away the spacious firmament with its innumerable stars into the depths of which the eye could penetrate so deeply, even through the darkness



*Serapias
Lingua.*

view. I had
lina, where

of the night, that one
seemed to realise
distinctly the
fathomless
perspective of
those distant orbs.

Next morning I revelled in
a profusion of flowers and felt
to what an extent the bright
colouring of this sunny coast
is due to them. I roamed at
random up and down between
the gardens of the villas. I was
surrounded everywhere by Roses
and Acacias in full bloom, by
Pelargoniums and Heliotrope;
the air was laden with the scent
of Orange blossom and Frezias,
of Wallflowers and Stocks.
Here and there a splendid
Wigandia, decked with violet
blossoms, bent over the wall.
New plants continually attracted
my attention. I walked past the
different gardens only once
remaining rooted to the spot
when a scene of tropical
beauty was suddenly disclosed to
reached the garden of the Villa Eve-
over the sloping walls of the terraces

such a variety of luxuriant shrubs overhung the path that it seemed as though a magic cornucopie had scattered its contents over the hillside. Opuntias, Aloes, Agaves and other succulent plants grew in wild luxuriance and afforded a striking proof of nature's exuberant fertility — a rich variety of subjects for the artist, more gorgeous than anything which the imagination could invent. Over this tropical scene an Olive tree pensively bows its branches: it was so interwoven by climbing roses as to look like a thick bower. Close by a dark Cypress raised its spire, and this too was crowned with garlands of roses. Everywhere yellow and white Banksias hang trailing from the walls. There are flaming Pelargoniums and tall Oleanders lining the border of the path. And above our heads Palms trees, draped with Ivy, raise heavenwards their curving fronds.

I now reached the Via Berigo and followed it in a westerly direction to the spot where it turns to the mountains. Here the fertile valleys of della Foce and San Bernardo come into view. Higher up the hill slopes were rich in olive trees and above these, picturesquely situated on the ridge of Cap Nero, was the ancient grey village of Coldirodi, flanked to the north by huge mountain masses.

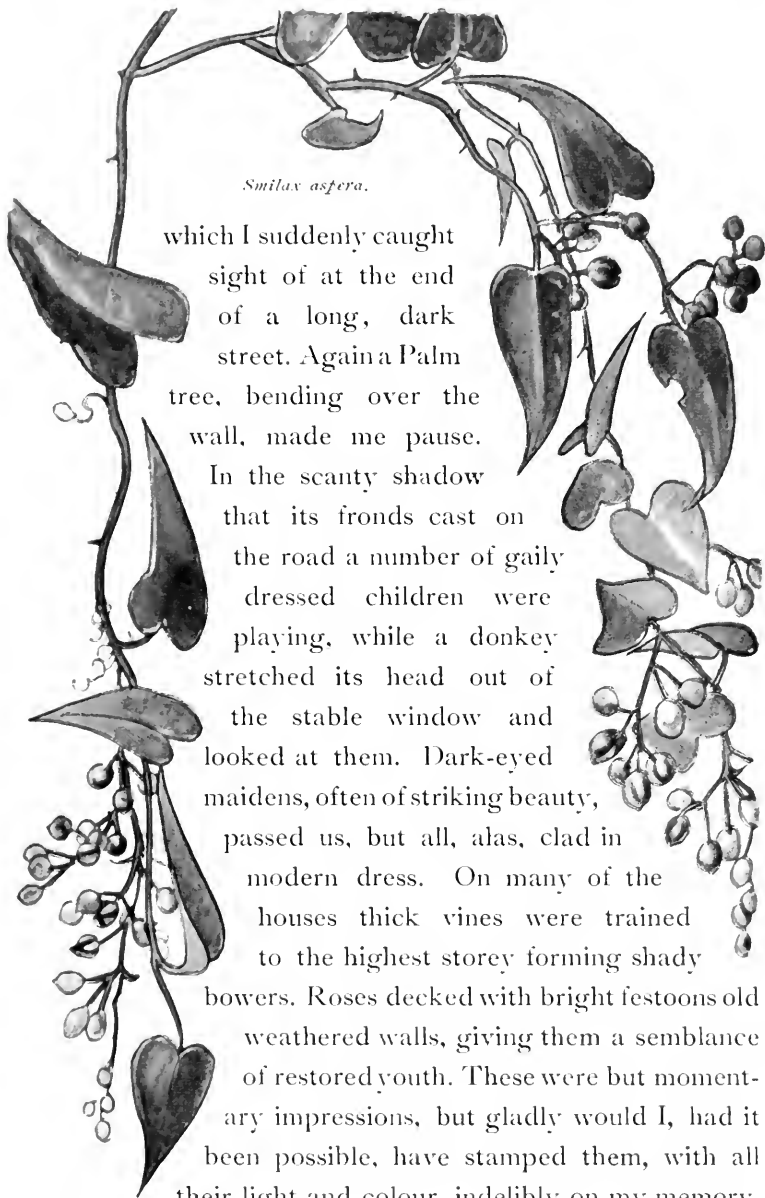
I turned, and again followed the windings of the Via Berigo between Villas and luxuriant gardens. Then I struck into the Via Borgo which encircles the Val San Romolo in a wide loop. Down in the Romolo Valley all the fruit trees were in full bloom, white, pink and pearl coloured. The Orange and Lemon trees displayed their golden fruit, while the Olive trees shone with black berries. The

Almond trees were resplendent in the light green of their young foliage and the figs were already sprouting. The whole showed such luxuriance as one might imagine was in the Garden of Eden. On the other side of the valley, crowning the hill, stood the old town of San Remo darkly outlined — an impressive picture, which Victor Hehn says reminds him of Taormina. The road crosses the valley by a bridge. I now turned to the east and followed the path that led to the sea. By the roadside was a Peach tree so covered with blossom that its boughs were almost entirely hidden. In the strong sunlight it stood out boldly from the dark blue background of the water. To the eye susceptible to colour harmonies the pearly pink of these blossoms on an azure ground would be a dream of delight.

The many-domed church of the Madonna della Costa, surrounded by slender Cypresses, overtops the old town of San Remo. I quitted the Via Borgo in order to walk up to the Madonna. She is enthroned in the midst of the wide semicircle of high mountains that form a sheltering wall round San Remo. The highest point of the range is Monte Bignone, which is 4,280 feet above sea-level. From its summit it falls in gentle undulating slopes eastwards and westwards till it reaches the coast, without a single gap through which the north wind could reach the valleys to the south. No white peak towers above this barrier to send down an icy draught. You must climb to the edge of this huge amphitheatre if you would gaze on the snowy region that lies beyond. From the Madonna della Costa you can look only due

south, away into the distance where sea and sky merge in a light blue mist.

The slope below the church is laid out with modern gardens, but we will not tarry here, for the picturesque old town of San Remo on the flank of the hill attracts us. Its blackened houses in the narrow streets are bound together by strong arches and vaults, thus forming a firmly knit mass capable of resisting even violent earthquakes. Loggias, terraces and sharp angles in the streets break the monotony of the lines. We notice the time-worn figures of the Madonna as we pass; and we meet women, in the ancient costume of the country, slowly mounting the steep hill carrying water on their heads in copper vessels. At one street corner I lingered. Through the deep shadow of a dark vaulted passage I saw a house lighted up by dazzling sunshine: at the threshold sat a woman attired in blue and red, with a child, dressed in white, in her arms. A ray of sunlight gilded the curly locks of the child. The arched passage formed a setting to this picture. It was a living model of one of those Madonna pictures that the great Italian Masters of the Renaissance so skilfully transferred to canvas. There was the same grace in the attitude and the drapery, the same artistic effect of light and shade and a similar harmony in the surroundings. This scene attracted me and I stood so long that the curiosity of the passers by was aroused and I had to leave the spot. But my attention was soon again arrested, this time by the high belfry tower of San Sirio, flooded with golden light,



Smilax aspera.

which I suddenly caught sight of at the end of a long, dark street. Again a Palm tree, bending over the wall, made me pause. In the scanty shadow that its fronds cast on the road a number of gaily dressed children were playing, while a donkey stretched its head out of the stable window and looked at them. Dark-eyed maidens, often of striking beauty, passed us, but all, alas, clad in modern dress. On many of the houses thick vines were trained to the highest storey forming shady bowers. Roses decked with bright festoons old weathered walls, giving them a semblance of restored youth. These were but momentary impressions, but gladly would I, had it been possible, have stamped them, with all their light and colour, indelibly on my memory.

The eastern part of San Remo has developed of late with marvellous rapidity. New hotels and villas are to be seen everywhere. Garden follows garden in long succession. The east bay of San Remo is indeed splendidly sheltered from the winds. The new Promenade, "Passeggiata Imperatore Frederico", leads along the shore and has the advantage of the western Promenade "Corso dell' Imperatrice" in that the railway does not pass between it and the sea. Yet it is devoid of trees, whereas the other is better shaded and more popular.

I started for Punta di Capo Verde, crossing the eastern part of the town. The outlook from the road on the Cap is monotonous, and I repeatedly looked back at San Remo basking in the morning sun. It was a very hot day, although we were still in the month of March. A pleasant breeze sprang up cool and fresh from the sea. I struck into the paved path that leads up to the Madonna della Guardia and suddenly a magnificent prospect appeared before me, well worthy of the praise that has been bestowed upon it. To the east, at no great distance, the view was closed by the ridge of San Lorenzo. Yet westwards the eye could range along the coast far away into the blue distance, where the lighthouse of Antibes rises like a shadowy phantom from the sea. The view inland was still more attractive. There towered a mighty host of mountains. Deep valleys descended steeply from their heights to the shore, clothed in the silvery grey of the Olives and filled with the bright beauty of flowering fruit trees. Lofty Cypresses and noble Evergreen Oaks, growing

by the church, form a frame to this unique picture. Then the attention is attracted by the ancient village of Bussano, which, as seen from a short distance, looks like a pile of rocks rising skyward on the summit of a precipitous cliff. The place was completely destroyed by the earthquake of 1887 and is now a most romantic looking ruin. But among its fallen houses a tall and slender church tower rises. Has this been newly erected, or did it alone survive the destruction? The answer to this question was supplied by a man who had approached me in order to beg. The tower did really remain standing. "C'un miracolo" he added. The old village of Bussano was deserted by almost all its inhabitants, only the very poorest remaining because they were quite unable to find any other lodging. Those who were better off built a new town in the valley, not far from the shore. In comparison with the old Bussano this place has a very prosaic appearance. Looking down on it from this high ground, one might imagine that children had emptied out a box of coloured toy houses and set them up all neatly and tidily in a row. Perhaps the picturesque situation of the earlier village was due rather to necessity than to the love of beauty. The dread of pirates may have driven them to take refuge on these inaccessible heights and to crowd their houses together so as to form a sort of fortress. Castellaro was thus constructed, that village, grey with age, which stands some little distance to the east above the valley of Taggia. Below it lies the village of Taggia, famous for its Olives and rich in fertile gardens which lie along

the river. This little place is much visited by strangers. Enthroned in the mountains to the north-west is Ceriana, very old and exceedingly picturesque. At the time of the Saracen peril it found security in its elevated situation on the spur of Monte Bignone. To the right of Ceriana, beyond the promontory, a few peaks are seen sprinkled with snow. The valley of Taggia, too, is closed in to the north by white-capped mountains, but the snowy range of the Maritime Alps is not visible from here, although the Madonna della Guardia projects far out into the open sea.

On returning to the town I had an opportunity of watching an "Intarsiatore" at work. The "Intarsia" industry still survives at San Remo, and I was interested to learn what kinds of wood have been employed for long ages in this mosaic work. The ground-work of the picture that I saw consisted of veined yellowish-brown Olive wood, Holly supplied white, black was prepared from the Fig tree. *Zizyphus vulgaris* furnished bright red, the Carob dark red shades, the Arbutus flesh colour, Lemon and Orange wood bright yellow, the Evergreen Oak light brown, and, finally, the Hazel grey.

I was struck by the numbers of lemons which, in spite of the advanced season, still remained on the trees round San Remo. In answer to my enquiries, the people complained bitterly of the decline of the lemon trade and the steady falling off in prices. This was due firstly to the competition of the Balearics, and now the export to America is ceasing as this country is beginning to supply its own lemons.

The next day I visited Ospedaletti. If you approach this place from the east you will not see it till you are close upon it, for it lies in the trough of a valley and is concealed by a projection of the mountain to the east. This colony is said to be of very ancient origin, and its foundation is ascribed to lepers, who were left here by a ship of the Knights of Rhodes. Hence the name. Until two decades ago Ospedaletti was only a simple fishing village. Speculators, however, took possession of it with the object of converting it into a second Monte Carlo. Hotels were built and a "Casino", which was to entice "birds of passage" laden with gold, into this new "Roccolo". But the Italian government refused the license for gambling, and so the fine buildings erected by the *Crédit Foncier Lyonnais* are now used as Sanatoria. The place is better sheltered from winds than San Remo,



*Smyrniun
Olusatrum.*

and therefore better adapted to those suffering from chest complaints. At the same time its views are limited owing to its secluded position. Looking landwards only the slopes of the valley, in which the town lies, can be seen, and the views along the coast are closed to the east by Capo Nero and to the west by Cap D'Ampeglio. In this recently created health resort everything looks so new that one might almost imagine them to be theatre decorations. And yet, thanks to the extreme mildness of the climate and the money spent in planting large shrubs, the parks are already flourishing and the Palm trees of considerable height. Pretty paths lead to the top of the slope and continue through luxuriant Maquis. Many a fair scene is disclosed within the narrow limit. Down by the shore, close to Cap d'Ampeglio lies the beautiful garden laid out by Ludwig Winter near the Scheffel Palms. This garden has developed marvellously in the course of ten years, under careful management. It has become, what it was intended to be, an eminently artistic creation.

I struck into the path to Capo Nero up to Coldirodi. An unassuming little church stands on the bare and lonely ridge, not very far from the entrance to the village. I directed my steps first to it. In Italy churches and monasteries are always built on spots with lovely views. Perhaps in the choice of a site an unconscious touch of Nature worship may have been mixed with the religious sentiment. This little church too is most beautifully situated and commands a view over all the green valleys and the many villages facing the sea between Capo Verde and

Cap d'Ampeglio. The semicircle of high hills here is uninterrupted. These with their chief, Monte Bignone, and his vassals, Monte Caggio and Pian Carparo, defy the cold north winds. On the other side of Old Bordighera rise the familiar peaks above the coast: there the green peninsulas project far into the sea, forming deep bays, and in the misty distance the eye seems to discern the jagged outline of the Esterel. The quaint little town of Coldirodi, with its crooked streets, reminds us strongly of San Remo and of Taggia and Ceriana. Blackened houses built of stone, buttresses and arches, unexpected gaps, through which one looks down into the valleys or sees the top of a mountain, and here and there ruins covered with a luxuriant growth of vegetation. For the last earthquake destroyed a portion of Coldirodi. But this scene of desolation is decked with flowers, the bright arch of the sky is above it, and it is gilded by the splendour of the southern sun. Through Olive groves we descend by a stony path into the valley of San Bernardo, with the picture of San Remo always before us. The old Olive trees are so weirdly beautiful that they rivet our attention, and yet it is necessary to look downwards, for walking on the smooth round stones is at times a veritable gymnastic exercise.

CHAPTER IX.

On the morning of Palm Sunday I went to the flower market at Nice to revel in the wealth of colour there. Every spring these frail things lie piled up in great quantities, doomed to an early death, and not even

certain of a purchaser to take compassion on them. The nearer mid-day approaches the cheaper are they offered for sale. Those that are unsold find their way to the rubbish heap. Roses of various colours filled the baskets; bright yellow and soft white Marguerites were heaped upon the tables. Near by were large *Iris Sussiana* mottled with grey and deep violet, which the gardeners have called "Lady in mourning".

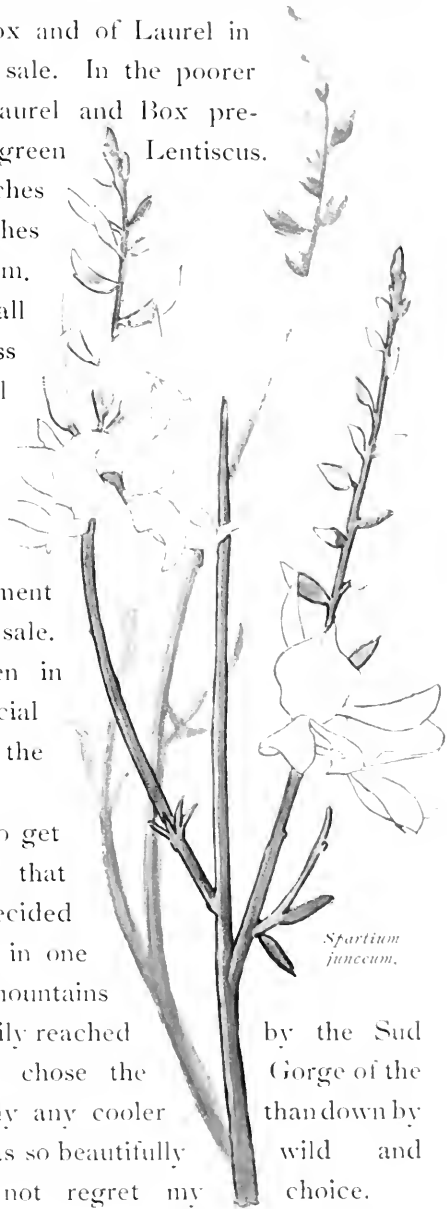
Next, in striking contrast, were the snow-white Ethiopian *Zantedeschias* (*Z. aethiopica*), which we know as *Calla aethiopica*, and often grow in our rooms at home. Yellowish-brown Wallflowers, double Stocks of all shades, large Violets, Freesias and the allied Hyacinths, Narcissi, Tazettas and Jonquils, filled the air with their fragrance, while among them large bunches of dark blue Cornflowers were conspicuous. Besides these there were Pinks of extraordinary size, and brilliantly coloured Anemones on every stall; and lastly close by there were baskets filled with sprays of orange blossom.

We walked up and down between all these flowers, unable to take our eyes off them, and undecided as to which we preferred. When a purchase was at last decided upon, a crowd of women surrounded us offering their services as carriers. And even when the basket was filled to overflowing the temptation to buy something more was hard to resist!

In front of the Nice churches, even on this morning, a brisk sale was being carried on. In the fashionable parts of the town they were selling etiolated Palm fronds with plaited pinnae, also crosses made of the same. Be-

sides these, twigs of Box and of Laurel in bloom were offered for sale. In the poorer quarters of the town Laurel and Box predominated, with the evergreen Lentiscus. The Laurel (Fig. 251) fetches a higher price if its branches bear fruit as well as blossom. The clusters of its small yellowish flowers are less striking than the oval berries which are the size of an Olive and almost black. It is these latter, therefore, that form the chief ornament of the twigs offered for sale. But as the fruits ripen in autumn it requires special care to keep them on the tree until spring.

It was beginning to get very hot in Nice on that Palm Sunday and I decided to seek a cooler spot in one of those valleys in the mountains which can now be so easily reached de France railway. I chose the Var, but found it hardly any cooler than down by the sea shore. Still it was so beautifully romantic that I did not regret my



*Spartium
juncum.*

by the Sud Gorge of the wild and choice.

The first part of the line was already known to us as it leads to Grasse. The vegetation in the wide valley of the Var was as yet but little advanced, the deciduous shrubs appeared more bare than they were at the corresponding time last year. But the glorious distant view of the snowy Alps from Colomars, and the sight of those old grey villages poised like eagles' eyries on the rocks, delighted us anew. This time we kept to the left bank of the Var beyond Colomars, on the road that leads to Puget Théniers. But at the next station, the Pont Charles-Albert, I left the train to continue the excursion on foot. At the same time several gentlemen from the south of France also alighted here with the intention of ascending Mt. Vial, 5,110 feet high. Its summit can be easily reached from Gilette, six kilometres distant from here. Below the summit is a cave, the Balme de Touasc, in which the night can be spent so as to be at the top by sunrise. The view embraces the whole chain of the snowy Alps, from Mont St. Honorat to the Cima del Diavolo, nearly the entire coast of the Riviera di Ponente, and the sea as far as Corsica. These gentlemen invited me most cordially to join them in their excursion, but I was due in Nice at a fixed time, and therefore I was obliged to abide by my original intention. I followed the bank of the Var with the gorge, through which it flows, always before me. To my left were precipitous rocks with ancient villages on their summits. Behind these rose Mt. Vial in a succession of steps. Near the mouth of the ravine a stream of water gushes out from the rock. It is water from

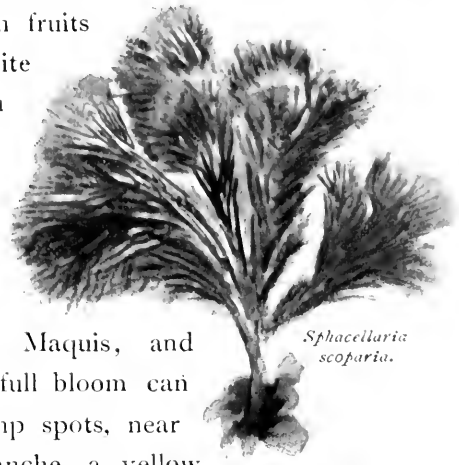
the Var which has been drawn off higher up and used to generate power for the electric trams of Nice. At Le Chiaudan the grandest part of the road commences. Here the wide Var valley narrows into a gorge, through which the torrent, pent up in the narrow bed, rushes violently. The high road has been made by blasting away the rock, the railway going for the most part through tunnels. We walk between high walls of rock whose summits are lost to view. The strata in the Jurassic limestone of the ravine are strangely contorted and many coloured. The torrent has undermined the cliff in many places so that its bed is not seen from the road. The outline of the rocks varies continually. High peaks move past the opening of the valley, then one of the fantastic rock villages, like shifting scenes. One more turn in the road and we are completely hemmed in on all sides by walls of rock. We can see only the blue vault of heaven. The leafless trees of the broad valley of the Var ceased at the entrance to the gorge where the vegetation consists mainly of evergreen shrubs. Even in the depths of winter, on sunny days, the ravine is worth a visit, for these plants do not change their aspect in winter. The Box, which in many places conceals the light coloured rocks here with its dark foliage, is uncommon in the local flora. The yellow Broom grows where it produces the most striking effect, and the sweet Violet covers some of the slopes in such abundance that they are quite blue. Beyond La Tinée the narrow valley appears to be shut in on all sides by mighty cliffs, brightly coloured in red, grey and white. A bold

bridge crosses the torrent obliquely and we reach the spot where the Var and the Tinée unite. The Tinée bursts forth from a narrow rocky opening, and as the two torrents mingle here, the place is called "Mescla". Another short stretch and the gorge begins to widen. I returned to the station at La Mescla to wait for the train from Puget Théniers. I had walked slowly and continuously up hill more than nine kilometres from Pont Charles Albert.

Nice is now a centre for numerous electric trams that run along the coast as well as inland. Before very long they will connect Mentone and Cannes without a break. The nature lover may consider this an improvement, for in these cars he can enjoy uninterrupted views along the coast, and suffers less from motor dust than in an open carriage. This spring they were already running between Mentone and Cap Martin; Beaulieu, Nice and Cagnes; and Antibes and Cannes; not to mention the lines inland.

Next day I went from Nice to Beaulieu, taking the tram part of the way, and was struck by the large number of Opuntias, (*O. monacantha*), all along Mont Boron. This Cactus, a native of Brazil and the Argentine, has become a formidable rival of the *Opuntia Ficus Indica*, which has been naturalised on the Riviera di Ponente. *Opuntia monacantha* is beginning to predominate in the neighbourhood of Nice and San Remo. Its stem is dark green, its lobes smaller and flatter and not so sharply separated from each other as in *O. Ficus Indica*. It has larger and whiter spines and bears an abundance of fruit, while

O. Ficus Indica seldom fruits in this country. In spite of the encroachment in the direction of Villefranche, made by the Boulevard Carnot, the south-east corner of the Mont Boron has still some remains of Maquis, and quantities of *Cistus* in full bloom can be seen there. On damp spots, near the road above Villefranche, a yellow



*Sphacellaria
scoparia.*

Snapdragon, *Antirrhinum latifolium* (Fig. p. 33), grows in clumps and attracts attention by the size of its flowers. *Galactites tomentosa* (Fig. p. 187), which is widely distributed on the Riviera, was also growing here in abundance. It is a Centaury with bright violet flowers and is remarkable on account of its leaves spotted with white which look as if sprinkled with milk.

From Beaulieu I struck into the inviting foot-path which follows the eastern shore of Cap Ferrat. A strong wind was blowing from the sea, and the water was very rough. Heavy breakers beat against the rocks, and threw their spray up onto the path. The pretty *Cineraria maritima*, (Fig. p. 77) grew everywhere on the garden walls. Here it was very luxuriant and stretched its silvery grey tufts of leaves sea-ward, for it loves the briny breath of the sea. On the steep rocks, against which the waves broke, grew the greenish-grey *Anthyllis Barba Jovis* (Fig. p. 29); this too revelled in the salt breeze.

Great masses of dead Grasswack lie heaped up on the shore in the bay of Beaulieu. The waves now beat furiously on this bank of weed, dashing it up into the air. The water looked as black as ink far out into the bay. Fancy might paint such a sea in Hades with its waves breaking on the gloomy shores of shadow-land. The old Olive trees on the shore, with their weirdly contorted trunks and boughs, would be in keeping with this idea: and the painter Hoellenbrueghel could not have wished for anything more fantastic. Formerly Beaulieu could boast of its ancient Olive trees, but has now sacrificed them to the builder. Two of the largest existing trees, one measuring over six yards in circumference, can be seen at the turn of the road in front of the Hôtel Beaurivage.

The stretch of land between Beaulieu and Eza is called "Petite Afrique". It is certainly the warmest spot on the western Riviera, and probably the warmest along the whole coast from the south of Spain to the Gulf of Salerno.

CHAPTER X.

At the Cap d'Antibes, my favourite resort, Herr A. Sella, for many years the manager of the Grand Hôtel, greeted me with the information that the house had now come into his possession. He took over at the same time, not only the ground around the Hôtel but also the adjoining park that had hitherto belonged to the English family Close, but which now, as "Park Sella", would be open to the visitors at the hotel. The Grand Hôtel

du Cap has thus upwards of seventy hectares of land covered with Maquis. Herr Sella has also obtained for his guests access to the extreme point of the Cap, on which are the Moorish buildings. I was delighted to hear this news. At a time when all property on the Riviera di Ponente is being parcelled up into petty fragments, and when the primitive vegetation of the Mediterranean region is fast disappearing all along the coast, it is a matter of congratulation that one of the most favoured spots has been rescued for the enjoyment of those who delight in Nature. The Cap too, removed as it is from the beaten track, and with its hilly winding roads, suffers less from the plague of motors than the large towns on the coast which are connected by straight and comparatively level roads. May the Cap d'Antibes long attract those visitors who delight in the scenery and the botany of the Mediterranean region, and are in search of bracing air and rest on the Riviera.

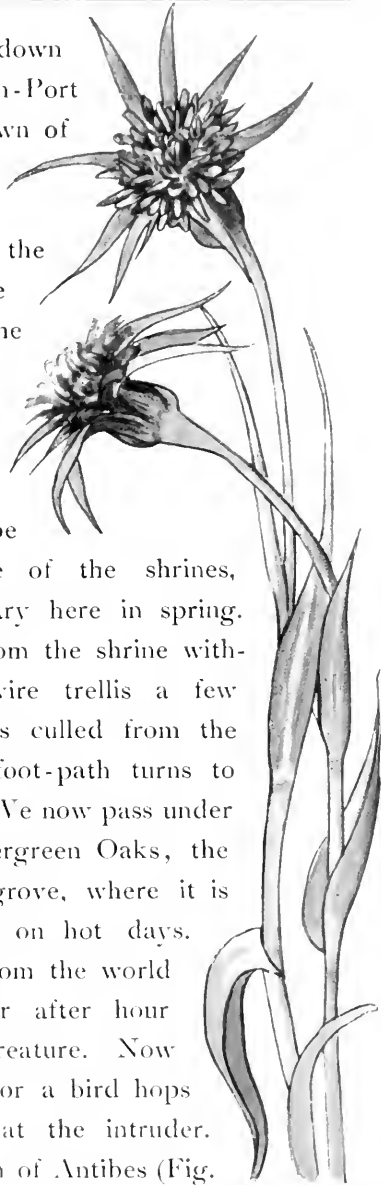
In spring-time the peaks of the Maritime Alps are often veiled in cloud, but they now stand out sharply against the clear background of the sky. It was always a fresh joy to me to look from the window in the early morning at the snowy chain of the Alps, and to see how they changed to purple in the light of the sunrise.

I always went out early to enjoy the magnificent view over land and sea from the hill of Notre Dame de Bon-Port, often returning through the Maquis. But I found that it is not always advisable to take a short cut through the tangled undergrowth. You may come

into unpleasant contact with the spiny *Genista*, and perhaps even be unable to move backward or forward. An unexpected encounter somewhat startled me, for as I was putting my foot down on a withered branch of *Lentiscus*, a snake as thick as my wrist and nearly five feet long swiftly escaped. Fortunately I had not trodden on the creature, and it seemed harmless, for it went away without showing any sign of anger. This "Lizard Snake" (*Coclopettis Lacertina*) is not uncommon at the Cap d'Antibes. It is distinguished from all other European snakes by its deeply hollowed forehead and by the scales of its back being deeply grooved lengthwise. The ground colour of the upper part is olive-brown. This snake hisses loudly and thus often frightens those who happen to come across it. But although it possesses in each jaw a large sharp tapering fang, its bite is not dangerous. From the moment when I was clear about the nature of this snake, I felt no uneasiness. It did not prevent my taking further rambles in the Maquis on the promontory. Apparently it was not this Lizard Snake, but another yellowish one, *Coluber Aesculapii*, which played a part in the service of the Greek Aesculapian temples. The Romans introduced these reptiles to Italy and they may also have brought them to the German Spas. For they have been, and still are, met with in Germany, particularly in the vicinity of the old watering places, such as Schlangenbad, which is named after them. As a symbol of prophecy this serpent is wound round the staff which Aesculapius, the God of healing, bears in his hand.

A paved road leads down from Notre Dame de Bon-Port in the direction of the town of Antibes. The cobbles of this road have become so smooth and slippery in the course of time, from the feet of the pilgrims who come here on the 8th of June, that it is only with difficulty that one can keep a foot-hold on them. Now and then a woman may be seen kneeling before one of the shrines, otherwise it is very solitary here in spring. No devotee comes away from the shrine without sticking into the wire trellis a few evergreen twigs or flowers culled from the Maquis. Half way up a foot-path turns to the left along the slope. We now pass under the shade of fine old Evergreen Oaks, the remains of an extensive grove, where it is cool and refreshing even on hot days. One is quite withdrawn from the world here, and can pass hour after hour without seeing a human creature. Now and then a branch stirs or a bird hops up and looks surprised at the intruder.

The old fortified town of Antibes (Fig. p. 1) would be well worthy of preservation as



*Tragopogon
australis.*

a national monument. Nevertheless it has been handed over to speculators who decreed that the walls and fortifications facing landwards should be demolished. But the portion of the town washed by the sea still retains its mediaeval aspect, and there are plenty of spots to be found on the Cap, whence this splendid picture can be seen in a suitable setting against the dazzling background of the snowy Alps. "Je n'avais jamais rien vu d'aussi surprenant et d'aussi beau" exclaimed Guy de Maupassant, on seeing Antibes at sunset. These are the opening words of a little novel to which he gives the title of "Madame Parisse". This picture made a similar impression on me the first time I saw it from a rock near the shore towards evening. "The little town", writes Guy de Maupassant, "surrounded by massive walls built by Vauban, juts out into the open sea, in the middle of the vast Gulf of Nice. The crested waves break at her feet surrounding her with white foam. The houses crowd one upon another above the fortifications, right up to the two towers that rise proudly towards the sky. And these houses and towers stand out against the milky whiteness of the Alps, that giant wall that closes the view in the far distance. . . The blue of the sky above the Alps is so faint that the snow would seem to have robbed it of its colour. A few silvery clouds floated above the pale peaks and on the other side of the Gulf, at the water's edge, lay Nice, forming a broad belt between the sea and the hills. Two boats with Lateen sails were gliding over the waves under a steady breeze . . . It was one of those sweet and rare visions that impress the human

soul, remaining like the memory of bygone bliss. We live, we think, we suffer, we are impressed and we are attracted by sight. And he who is capable of receiving deep impressions through the eye, can feel as he looks on Nature the same intense enjoyment as the musician who listens to the most exquisite harmonies”.

The town of Antibes was, it seems, originally inhabited by the Ligurians. It was called “Deciatium” but later was given the name of “Antipolis”, as the town opposite to Massilia. The Via Aurelia passed its walls, and the twelfth Legion was garrisoned here. After the battle of Poitiers, Antibes fell into the power of Clovis, and later was sacked and pillaged by various tribes, until it fell into the hands of Henry IV. Recognising the strategic importance of its position at the gates of Provence, he bought up the rights of the Grimaldis and other Barons, and took possession of the place. He intended to fortify the town; but it was Richelieu who first began to carry out these plans which were continued by Vauban under Louis XIV, and only completed in the lifetime of Louis XV. The inhabitants of Antibes, mindful of royal favour, remained good Royalists. This they still proved to be in 1815, when Napoleon I landed at Golfe Jouan after his escape from Elba. Napoleon sent Captain Lamouret with one lieutenant and sixteen Grenadiers to Antibes, to place the Imperial Eagle on the fortifications. But the Commandant of the Fortress, Colonel Cunéo d’Ornano, had these envoys imprisoned and forthwith declared the town to be in a state of siege. On March 11th they were compelled by Masséna to hoist

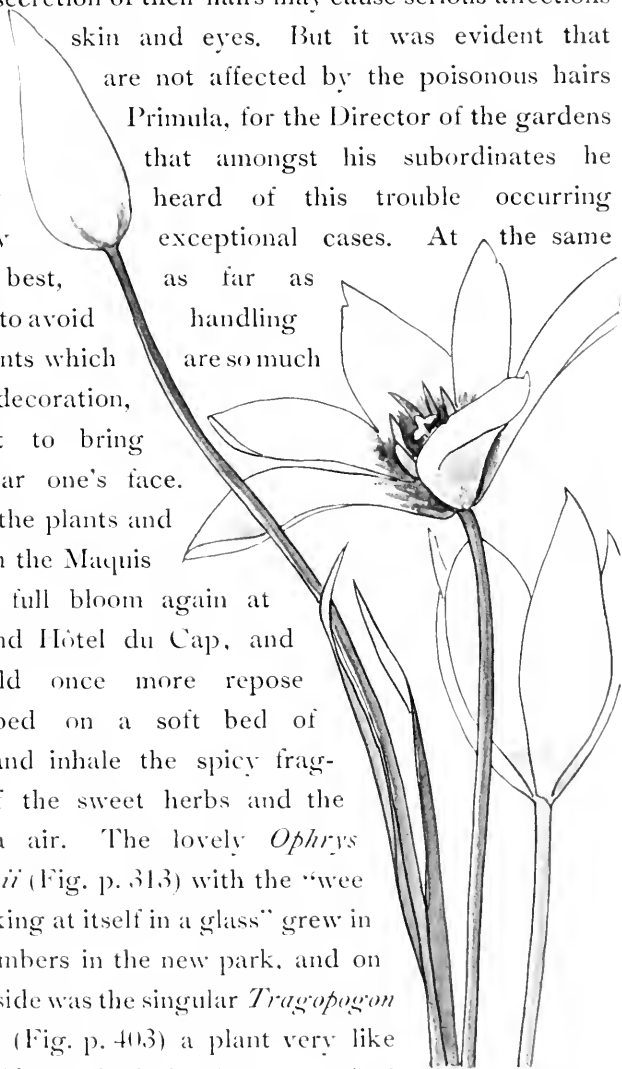
the Imperial Standard on the Fortress. But Louis XVIII. was grateful to Antibes for the first resistance it had made against Napoleon, and presented the town with a new coat of arms, bearing gold lilies; and besides this he conferred on the town the privilege of calling itself his "bonne ville".

Vauban's "Fort Carré" still stands unimpaired on the other side of the harbour of Antibes. Like a gigantic starfish cast up on the shore, this bulwark stretches out its bastions towards all points of the compass. Often have I been lost in contemplation of this lovely scene late in the day when the setting sun tinged the snow of the Alps with rosy red, and the fort, already deeply steeped in the dark shadows of evening, was silhouetted against the clear background of the mountains. I either wandered along the sea-shore by the roadstead of Antibes or sat down on the further side of the old cemetery and gazed on the view through a setting of tall and ancient Cypresses.

The nursery gardens of Vilmorin-Andrieux are well worth a visit. The entrance is just above the Villa Thuret on the main road leading from Antibes to the point of the Cap. This plantation is devoted to the rearing of special kinds of seeds. In the spring the extensive green-houses on the terraces of the gardens, which slope down towards Golfe Jouan, are chiefly stocked with Primulas and Cinerarias. The plants under cultivation are all show specimens; each plant resembles the other in every respect. The eye is quite dazzled by the brilliant colours of the Cinerarias. The two species of Primula cultivated here in countless varieties

of shape and colour are *Primula sinensis* and *obconica*. We have recently been warned about these Primulas, as the resinous secretion of their hairs may cause serious affections of the skin and eyes. But it was evident that all alike are not affected by the poisonous hairs of the Primula, for the Director of the gardens told me that amongst his subordinates he had only heard of this trouble occurring in very exceptional cases. At the same time it is best, as far as possible, to avoid handling these plants which are so much used for decoration, and not to bring them near one's face.

All the plants and shrubs in the Maquis were in full bloom again at the Grand Hôtel du Cap, and we could once more repose undisturbed on a soft bed of Myrtle and inhale the spicy fragrance of the sweet herbs and the pure sea air. The lovely *Ophrys Bertolonii* (Fig. p. 313) with the "wee bird looking at itself in a glass" grew in great numbers in the new park, and on the roadside was the singular *Tragopogon australis* (Fig. p. 403) a plant very like our Salsify, with dark violet, terminal



Tulipa Clusiana.

flower heads on a bare stem, surrounded by the green involucre. The Spanish Broom *Spartium junceum*, (Fig. p. 395) is so abundant in this portion of the Maquis that whole tracts are covered with it. A wealth of large golden-yellow pea-flowers, poised on slender branches, contrasts with the blue of the sky. The Pointe de l'Islette, in that part where the pseudo-moorish buildings stand, is planted with a collection of shrubs as incongruous as the architecture. They have destroyed the Maquis bushes and replaced them by *Cupressus macrocarpa*, *Pittosporum*, *Medicago arborca*, *Agaves*, *Iris* and *Mesembryanthemum acinaceforme*. It seems as if they had intended to make experiments in acclimatisation here, to ascertain which foreign plants could best resist such an exposed situation. *Pittosporum*, the large fruited Cypress and the Mesembryanthemum have been very successful. One wonders at their powers of resistance, on such stony ground, to the winds, the fine sea-spray and the continued drought. Not only do they endure it but they flourish. A gardener would indeed be necessary to help the indigenous vegetation to re-assert its rights. Let us hope that the time is not far distant when the "Islette" will again be clothed in the fragrant beauty of the Maquis! A few native plants have held their ground on the further end of the point, and at present there grow yonder, *Cistus* (Fig. p. 83) and Oleaster; Myrtle and Lentiscus (Fig. p. 349) spread out like cushions; while the silvery grey foliage of *Helichrysum* and the bright yellow blossoms of the Bird's foot Trefoil adorn the ground. But the paths on this rugged strip of rocky

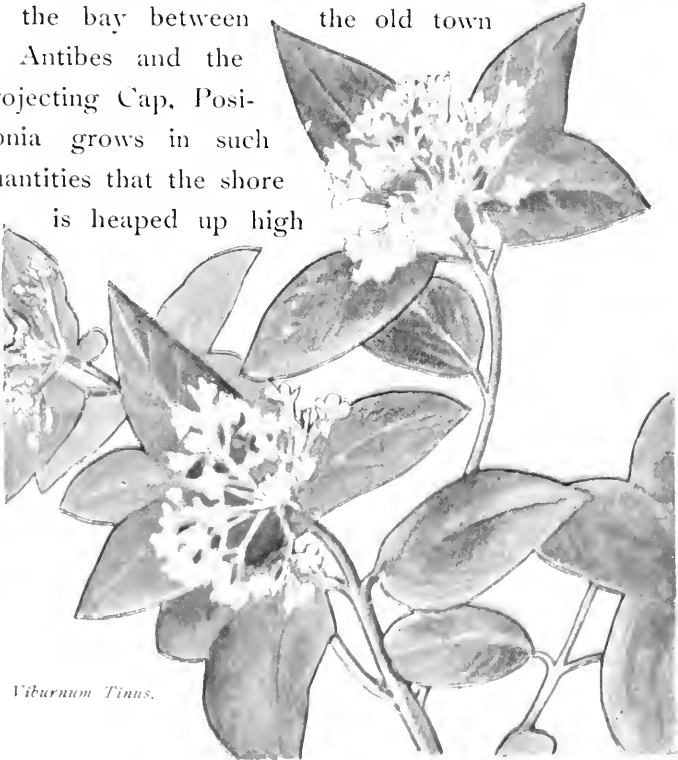
land are the one permanent advantage of this over-cultivation. These extend to its further end and make it possible to reach the wild cliffs which disappear beneath the waves. Here you can climb from rock to rock, until at last your feet touch the blue water. There one can lie down, gazing into the crystal depths, and spy out the curious plant forms which the sea contains, and listen to the music of the waves which lose themselves amongst the labyrinthine passages of the rocks.

CHAPTER XI.

Plants are not found at so great a depth in the sea as animals because of the conditions necessary for plant life for they require light to assimilate the substances on which they live, while animals are less dependent on light. For plants utilise the rays of the sun to convert inorganic substances into nourishment. They transform the energy of the light into chemical action and are thus able to separate carbonic gas into its elements, oxygen and carbon; and also to divide water into its two component parts, oxygen and hydrogen. They build up in their organisms carbo-hydrates out of carbon, oxygen and hydrogen, particularly sugar and starch, which they need for the support of life and for forming their tissues. The assimilation of carbon takes place in the green portions of the living cell substances. This granular chlorophyll gives our landscape its green appearance. But amongst marine plants we meet with other colourings also. If you walk along the shore of the Mediterranean after a storm, you will see not only

green sea-weed but also brown and red thrown up. On a ramble along the rocky shore at the Cap d'Antibes, when the sea is calm, you will be struck by the same variety in the colours of the marine vegetation, and by the wealth of their forms. Many of the plants can be reached by hand and pulled from the stones on which they are growing. Branched green threads predominate near the surface of the water: they hang down loosely in thick wisps when the tide leaves them bare, and separate again into fine threads when a new wave reaches them. They belong to the genus *Claydophora* (Fig. p. 111) which is here represented by numerous species. In shallow places grows the ribbon-like *Ulva*, a green Alga on which they often serve oysters in Italy. Many other brown plants are found near the water's edge but they are different from those which we meet with on the coasts of the Baltic and the North Sea. There we find the various species of *Fucus*. Bladder-wracks with tough leathery forked and ribbon-shaped thallus. Here the bushy *Cystoscira* (Fig. p. 137) with cylindrical branches, grows abundantly. In the shady crevices of the rocks we find beautiful red species of varied and often elegant forms. These are all plants which we class together as Algae. The other divisions of the plant world are only represented by a few submarine species, such for instance as the *Posidonia oceanica*, a Ligurian Grass-wrack that predominates on the Riviera, often forming whole meadows in the shallow bays of the Mediterranean sea. With this, here and there, is found the small-leaved *Zostera marina* which bears the unpoetical

name of "Mattress Grass-wrack", because it is much used in more northerly latitudes for upholstery. In Venice it has been employed for ages to pack the glass ware and thus obtained the name of *Alga Vitrariorum*. *Posidonia oceanica* is also used in Italy, here and there, for packing, and in North Africa they thatch roofs with it. Both plants belong to the Pond weeds or Potamogetonaceae, and are monocotyledonous Phanerogams. Ligurian Grass-wrack grows at a far greater depth than the *Zostera*. In shallow water its leaves may be seen waving to and fro like grass in our meadows when stirred by the wind. In the bay between the old town of Antibes and the projecting Cap, *Posidonia* grows in such quantities that the shore is heaped up high



Viburnum Tinus.

with its torn off leaves. It is not advisable to walk over these heaps, for they give way under the weight of the body and one sinks deeply into the wet leaves. To the west of the Cap, on the sands of Golfe Jouan, round balls of a light brown colour and fibrous structure are often found. These used to be seen in chemists' shops under the name of "pilae marinae". They are loose pieces of the root-stock of Grass-wrack covered with the frayed remains of leaves. These are tossed about on the beach by the waves and formed into balls a decimetre in circumference.

Plant life in the sea does not descend lower than 1,150 feet. Below 200 feet it decreases rapidly even in the southern seas, for at this depth the light is too dim to maintain vegetable growth. By means of photographic plates Fol and Sarasin proved that in the Mediterranean sea, eighteen miles from the coast of the Riviera, there is still a very faint light action at a depth of 1,530 feet. Other investigators state that this action of light can, under certain conditions, exist 300 feet lower down. But the assimilation of carbon by the plant has long before this become impossible, especially as the composition of the light changes with the depth. Of the various coloured rays of the spectrum, the red and yellow are first absorbed, and the blue and violet last. If a beam of sunlight be allowed to pass through a tube a yard and a half long filled with pure water, the red colour will have already completely disappeared, the yellow will be but feebly represented, and the green will be the most brilliant. Near the surface, in sea water, green and blue-green rays predominate, while the red and yellow have,

in a great measure, disappeared. The water has absorbed them. Those who have been to the blue Grotto of Capri will remember the light effect that lends it such a magic charm. The light in the Grotto is so blue because it has passed through a considerable depth of water, which has absorbed the other rays. But according to the physicist, Heinrich Kayser, the green Grotto of Capri owes its colour to the fact that the bottom is level and consists of yellow, calcareous rock. As the red rays of light are so rapidly absorbed by the water we can understand why red star-fish do not look red but black at a certain depth. For there is no longer sufficient red light to be strongly reflected by them. Green land plants utilise chiefly the red, yellow and orange rays of light in the process of assimilation. But water soon absorbs these rays. The depth, in seas or lakes, at which photographic plates are affected, gives *per se* little information about the possibility of plant life at these depths, for it is chiefly the blue and violet rays that affect photographic plates. The rapid disappearance in the water of those rays necessary to green plants would have limited the zone of vegetation still more had not the Algae adapted themselves in a singular manner to their surroundings. Besides the green colouring matter, which the landplants contain, the Algae possess a red one, which enables them to employ other light-rays for the work of assimilation. These plants of the deep have assumed a colour which is complementary to that of the light which reaches them. Those Algae, therefore, which grow in the shallows,

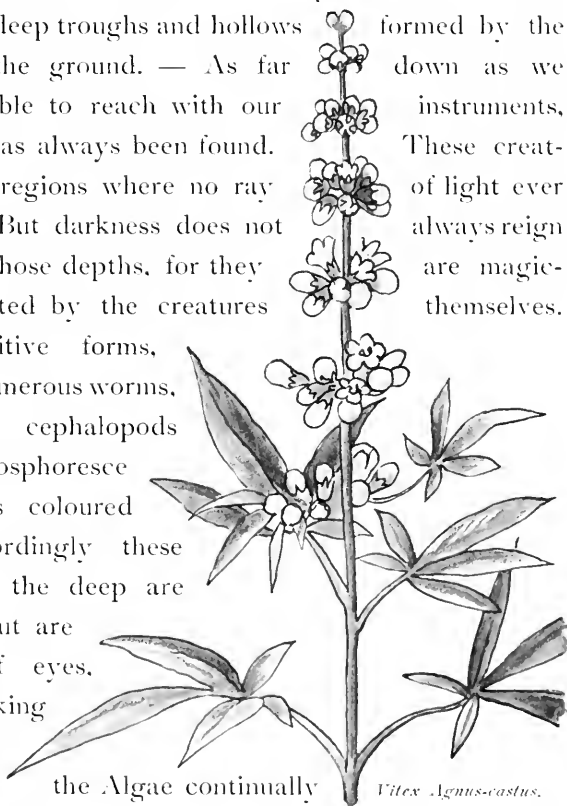
and so live approximately in the same light as our land plants, are, like them, green. The further from the surface the deeper the red becomes. But in narrow, rocky crevices and caves, where the plants depend chiefly upon indirect light, the red Algae approach the surface. In several of the Grottoes of Posilipo at Naples the red Algae, which usually grow at a depth of between 160 to 200 feet in the open sea, can be gathered by hand. The dark brown colour, by which many Algae are characterised, does not serve the same purpose as the red. It is supposed that this brown colouring matter acts as a screen and diminishes the force of the sunlight. Thus the brown Sea-wracks of the Mediterranean often grow up to the surface, and in our Northern seas we find at low tide quantities of *Fucus* in the open air, braving the direct rays of the sun.

These shade-loving Marine Algae are very sensitive to bright light. This was proved by Berthold who found that at a depth of from 260 to 360 feet in the Gulf of Naples there was too much light for them, and they therefore suffered.

At Capri Berthold obtained fine and well developed Algae at a depth of from 400 to 430 feet, showing that the lowest range of their habitat was not reached. This is remarkable when we consider that great white disks sunk into the Mediterranean, when it is calm and sunny, disappear from view at a depth of from 165 to 200 feet.

It may be asserted that the deep sea fauna begins approximately where plant life ceases. It continues down

into profound abysses surpassing in depth the height of the loftiest mountain ranges on the face of the earth. Soundings taken in the north west of the Pacific Ocean, near the Mariana Islands, showed a depth of 31,790 feet, this being the greatest depth ever reached in the ocean up to the present. This exceeds the height of Mt. Everest, the most lofty peak of the Himalayas, by about 2,900 feet. The deepest part of the Mediterranean (14,520 feet) is reached to the south of the Peloponnesus; the configuration of its bed is very varied, and exhibits many deep troughs and hollows formed by the sinking of the ground. — As far down as we have been able to reach with our instruments, animal life has always been found. These creatures live in regions where no ray of light ever penetrates. But darkness does not always reign are magically illuminated by the creatures themselves. Many primitive forms, especially numerous worms, crustaceans, cephalopods and fish, phosphoresce with various coloured lights; accordingly these creatures of the deep are not blind, but are possessed of eyes, often of striking size. — The diversity of the Algae continually

*Vitex Agnus-castus.*

surprises and delights those who begin to study them. These plants present a far greater variety of shapes than the land plants which surround us; especially the Rhodophyceae which abound in the Mediterranean. There are species of red Algae which consist only of fine threads; others whose various branches unite to form a definite structure, as *Calithamnion roscum* (Fig. p. 57). Others again are flat and branched in different ways, as *Nitophyllum punctatum* (Fig. p. 307); some resemble lichen, as *Peyssonnelia Squamaria* (Fig. p. 331); and lastly some remind us of highly organised plants, as *Diclesseria Hypoglossum*. In some cases the resemblance is so striking that an unpractised eye might be deceived as to their classification in the Vegetable World. Next to the red Algae is a group of green ones, the Siphoneae, which are very attractive on account of their elegance. Amongst these are species (*Bryopsis*, Fig. p. 53) branched like our Hypnum, others (*Halemeda*, Fig. p. 221) that resemble small Opuntias, and others again (*Acetabularia*, Fig. p. 9) that look like slender bright green Toadstools. But what most strikes anyone wandering on the sea-shore after a storm is a dark green ball (*Codium bursa*, Fig. p. 113), which may be the size of an orange or even of a child's head. This also belongs to the Siphoneae. I have often seen quantities of it in the Bay of Villefranche. It is filled with sea-water, and as this soon evaporates, the ball shrinks and forms a cap. Of the brown Algae, *Cystoscira* (Fig. p. 137) is the commonest. Next we have the bushy *Sphacellaria* (Fig. p. 309) and *Padina Pavonia* (Fig. p. 319) which, clinging to the rocks in crowded

masses, might be taken for mussels. The people call it "Orrechio di Mare", sea ear.

When staying by the Mediterranean it is instructive to make a small collection of Algae. This provides an attractive object for walks and excursions on the sea shore. These new plants cultivate our sense of form and enlarge our preconceived ideas of vegetable structure. When the sea is calm we can cut the Algae off the rocks with the sharpened edge of a wide-meshed nickelled sieve, fastened obliquely to a stick. We bring them home in a glass jar and place them in a bowl of sea-water. Fresh water must not be used as it injures the Algae. We then place each specimen in a very flat dish, like those used to develop photographs. The sea-water in this must be perfectly clean. We must not take too large a spray, otherwise the fronds will overlap. A sheet of white paper should then be slipped under, and the Alga carefully spread out on it, taking care to preserve its natural appearance. Paper and Alga are then taken out of the water. The Alga must now be dried with blotting paper, and, to prevent it sticking to this latter, it is necessary to cover the Alga with a piece of calico, or better still, a bit of gauze. The blotting paper must be frequently changed, for the plant will lose its colour unless dried rapidly. The drying must take place under considerable pressure, therefore the blotting paper must be put between two boards and weighted with a large stone. In drying, salt will crystallise on the Alga and the paper. This salt must be removed, otherwise it will constantly absorb moisture from the atmosphere. To get rid of the

salt the dried specimens must be plunged quickly into fresh water and again dried between blotting paper. It can then be added to the collection. How beautiful the specimens of such a collection are, and how well they preserve their structure and colour may be seen from the illustrations of *Nitophyllum punctatum* (Fig. p. 307) and *Delesseria Hypoglossum* (Fig. p. 169), which were drawn from dried specimens.

If a bowl of sea-water containing Algae be shaken in the dark, small flashes of light will be seen in it. This is caused by luminous creatures which rest on the Algae and emit sparks when disturbed. The Algae themselves do not phosphoresce, but many of them have a curious sheen in daylight and a wonderful brightness due to reflection. Certain cell-contents of these Algae are so constituted and disposed that they act like concave mirrors. In the Mediterranean the finest effects are to be seen in the genus *Chylocladia*, Rhodophyceae with whorled branches, which shine blue, silvery-white or pink, and are sometimes iridescent. The brown *Cestosira* also displays many colours when the waves move it to and fro in the sunshine.

CHAPTER XII.

A very strong Mistral, that generally set in towards midday, kept the sky clear, and we reached the second half of April without rain. On the 20th the sun sank behind the Esterel in a clear sky, but higher in the heavens long streaks of cloud had gathered. Soon they were tinged with red, and, imparting their colour to Golfe Jouan, made the crested waves quite rosy. The sky in the west, beyond the mountains, turned a deep

glowing orange: before long the orange changed to purple and threw blood red spots upon the sea. In this lurid light a shadowy bark glided silently through the water, reminding one of the ferry boat of Charon.

I quitted the sea-shore and ascended slowly to the hotel through the avenue of Pines and Eucalyptus. Their foliage appeared black against the brilliant background of the sky. Here and there red streaks of light gleamed between the branches, resembling fire. Gradually the colours paled and the wisps of cloud assumed a bluish-grey tint, leaving only their edges golden. In the west the orange tones lasted longer, then changed through light yellow to the bright green of the zenith. The sea turned a steely grey, then dull and black, and numerous lights appeared along the shore. The great beacon of the lighthouse traced its wide circle over land and sea. The clouds gathered in denser masses, till only isolated stars peeped down through the open portals of heaven.

Next morning it began to rain. The dry earth eagerly drank in the water of which it had been so long deprived, and the plants raised themselves towards the refreshing drops. A sudden fall in the barometer indicated a long spell of rain. We did not grudge it to this parched district, which had languished long months for want of water, or to these thirsty plants that had been compelled to satisfy themselves with dew. But the time had come for us to return.

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