THE HISTORY AND CULTURE OF THE OLIVE.

THE

ANNIVERSARY ADDRESS

OF THE

STATE AGRICULTURAL SOCIETY

OF SOUTH CAROLINA,

DELIVERED

IN THE HALL OF THE HOUSE OF REPRESENTATIVES,

NOVEMBER 26TH, 1846.

BY

THE HON. MITCHEL KING.

PUBLISHED BY THE SOCIETY.

COLUMBIA, S. C.
I. C. MORGAN, PRINTER.
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ADDRESS.

Gentlemen of the State Agricultural Society of South Carolina:

At the last anniversary of this Society, the Honorable JOHN C. CALHOUN was elected by you, unanimously, to make the Address, which, according to the Constitution and usages of the Society, should yearly at this time be delivered before you. After this appointment, at the earnest solicitation of some of our most distinguished citizens and in obedience to the voice of the State, he was called from his retirement to take a place again in our public councils, and to give the country the benefit of his large experience his mature wisdom and well earned influence. A crisis existed in our national affairs. Not only were our friendly relations with our sister Republic of Mexico entirely interrupted, but we seemed on the very verge of a war with one of the most powerful empires of the old world,—with which we have the most numerous and intimate commercial relations,—and questions of constitutional law were in agitation, of the deepest interest, affecting our whole internal policy, and on whose wise and happy solution the very existence of our Union may depend. In this emergency, not our State alone but all intelligent and impartial men, from Maine to Texas, from the Rocky Mountains to the Atlantic, looked to Mr. Calhoun. Nobly has he fulfilled the high expectations formed of him. The war with Mexico has added another page of success and honor to the history of our gallant army, and has taught to the nations jealous of us a lesson that will not soon be forgotten. But it has already caused a large amount of individual suffering—must involve a greatly increased taxation, with all its attendant evils, and can probably add little to our permanent prosperity. Had his advice been followed with a little more of prudence and foresight on her part, and of forbearance and kindness on ours, this war might, perhaps, have been avoided. Under Providence, he has been mainly instrumental in preventing a war with England, and in promoting the honorable adjustment of the only matter that remained between us and that country, likely to bring us into collision. His Report of the 26th of June last has shed on the vexed question of Internal Improvements a flood of light, which, whatever may be the ultimate result, will aid to illumine and guide the public mind to a safe and just determination. Blessed are the peace makers. Blessed are they who with powerful intellect and profound sagacity and unswerving integrity, establish on a sure foundation the principles of justice,—principles that approve themselves to the general understanding, and promote the best interests of society. Such men are public benefactors. The country which possesses them may well be proud of them and owes them a debt of gratitude which it should delight to acknowledge, and if possible, to repay.

The duties to which Mr. CALHOUN was called by his last election to the Senate of the United States obliged him to decline the office to which you

had appointed him—and your Executive Committee did me the honor to name me to it. Though you will regret the loss of the pleasure and profit which his familiar and extensive knowledge of Agriculture would no doubt have communicated to this office, you will not regret that he was prevented from affording them by his devotion to the service of the country, and by his availing efforts for the attainment of even higher objects. Yet, you gentlemen and your Executive Committee will, I trust, pardon me when I, in all sincerity, declare my unfeigned regret, that their selection had not fallen on some one more competent, more conversant with the great objects of the Society, and who could have laid before you facts and views within his own observation, worthy of being remembered and improved,—who could have added from his own experiments something to our information in Agricultural science, and made perhaps, in one department of it or another, a step in advance of our present progress. Very deeply do I feel my own unfitness to do justice to the office to which I have been appointed—yet, I did not feel myself at liberty to decline it,—I felt that you, gentlemen, had the right to call on me, and that it was my duty to obey the call, how much soever I might distrust my own competency to meet it. The engrossing studies and practice of a jealous profession, have left me little leisure or opportunity for Agricultural inquiries. Did the ability and knowledge fitting for the occasion at all equal the earnest will, then I might hope to be able to submit to you something which you would not willingly forget.

From the earliest accounts, traditional, or historical, of the human family, the culture of the ground has been considered the most important employment. The man who first planted the grain in the soil, with the view of producing a crop, was the greatest benefactor ever given to the world. The unknown discoverer, if he were a mere man, was deified by the ancients,—it may have been taught to him by the Author of his being, for sacred history tells us that God, when he had made man, "took him and put him into the Garden of Eden, to dress (to work) it and to keep it." This art laid the deep foundation of human improvement. In the works and days of Hesiod, it is the subject of one of the oldest poems, that amid the wreck of ages have reached us. It occupied the mind of a Xenophon and an Aristotle,—and Cato the Censor, the Cato Major of Cicero, has bequeathed to us the lessons of his experience in it. The treatises of distinguished men on this subject, in ancient mediæval and more modern times, are numerous,—but it is worthy of observation, that though it was studied and cultivated by individuals, no combined or continued effort for its improvement seems to have been made until about the middle of the last century—and it was yet later before any of the other sciences were invoked to the assistance of this the mistress and support of all the sciences. Columella, who was contemporary with our Saviour, and who has written the best work on Husbandry which has come down to us from antiquity, complains of this neglect, and tells us that while every other profession has its teachers, * "Sola res rustica, quæ sine dubitatione proxima et quasi consanguinea Sapientiæ est, tam discentibus egeat quam magistris,"—and what is even more remarkable, while there were schools for Cooks and Head-dressers and Hair-dressers, "contemptissimorum vitiorum officinæ."—"Agricolationis neque doctores qui se profiterentur —neque discipulos cognovi."

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* Columellæ, L. 1, Pref.

The causes of this just complaint continued—indeed, rather increased—for many centuries. Agriculture was probably more highly valued, and more carefully studied, and better understood, in the days of Theophrastus and Varro and Virgil, than in those of Corneille and Shakspeare and Bacon and Newton. Colleges were founded, and professorships endowed, and societies formed, for the cultivation of almost every other branch of knowledge. Agriculture had no such assistance. The revival of letters—the discovery of printing—the Reformation, which gave such an impulse to the human mind, and to the progress of society, did scarcely any thing for husbandry. The Agriculturist had no assistance from seminaries of learning or of science, and very little from the observations or experiments of his contemporaries. He was left to gather his information from the solitary writers on the subject who had gone before him—from the traditionary knowledge which attends every profession, and from the lessons of his own experience. Within the last century, great and most favorable changes have been effected. The causes of Columella's complaint have been now, and we trust, forever removed. These changes may well be considered as among the best evidences of the onward and upward progress of society. Agriculture has taken the place, and occupies the attention to which it is entitled. Associations have been formed to collect information, to encourage experiments, and to promote improvement. Professorships in it have been established in many of the great universities of Europe. The rich and the noble, the learned and the wise, of every civilized country, are using their efforts to advance and raise it, in all its branches, to the highest degree of excellence.

It must be confessed that, though since the first settlement of the country agriculture has been by far our most important interest, and the main, I might almost say, the only source of our wealth and prosperity, it has scarcely until recently, received among us that general and united encouragement to which it is entitled. It is true, that the Agricultural Society of South Carolina, begun in 1784, was organized on the 24th of August, 1785, and Thomas Heyward, Junior, one of the signers of the Declaration of Independence, and the late venerable Thomas Pinckney, were elected President and Vice-President. Gentlemen of distinction in other States, and among them Mr. Jefferson, then (in 1785) Minister to France, were elected members. Many of the members have, from time to time, communicated the results of their experience to the publications of the day, but these communications were not then collected into any permanent work. The publications in which they appeared, have most of them passed away, and though they may have added to what may be called the traditional knowledge of the planter, they generally cannot now be found and consulted for more accurate information. The money raised among the members was liberally expended in promoting the improvement of stock, importing new objects of agricultural industry, and endeavoring to introduce a better system of husbandry and new productive staples into the country. But the results of these efforts were not so successful as they certainly deserved to be. The introduction of the tide swamp culture of rice by Gideon Dupont, about 1783, and the extensive production of cotton as an export, nearly at the same time, were due rather to individual skill and enterprise, than to any public encouragement. But the spirit of enquiry and improvement increased. The establishment of the South Carolina College, sustained and

fostered this spirit. The light of learning and science, which has shone, and shines there with so much lustre, has cheered and illumined—may it ever continue to cheer and illumine—every corner of our land. The labors of a free press, and the diffusion of periodical literature, have carried information to every fire-side. Agricultural Societies have been formed in different parts of the State, and this Society, combining them all in united and continued effort has, we trust, commenced a career of usefulness that will lead to the most favorable results. The valuable addresses which have been delivered before you, the reports made to you, and the memoirs collected by you and published for general use, and placed within the reach of every planter, will be of lasting benefit. And the State, by the persevering, untiring efforts of gentlemen of this Society, has been induced to direct the Geological and Agricultural Survey, which, in the able hands by which it has been conducted, has already afforded much invaluable information, and it is earnestly hoped, will be continued until all the objects contemplated by it be fully attained.

It has been often remarked, that no kind of knowledge travels so slowly as Agricultural knowledge. While one county in England continued to plow with a man and a driver, and four or five horses, another at a short distance from it had, for years, plowed and done better work with one man and two horses. While one country has invented thrashing mills, and causes water or steam to thrash out the crop, another still employs the unmuzzled ox that treadeth out the corn. While the rice of Carolina was raised on the margins of rivers, within the ebbing and flowing of the tide, and pounded and prepared by machinery to bring the highest price in the market of the world, the Hindoo, under the control and direction of the intelligent Englishman, was content to pursue his old modes of culture and preparation.

Your anniversaries are of the greatest importance. They bring gentlemen together who would otherwise seldom meet. The Reports of your Committees, the discussion of the experiments of the past year, the examination of proposed improvements or alleged discoveries keep alive and stimulate the spirit of enquiry in which they originated. They promote the general diffusion of agricultural knowledge. The information of one becomes the information of all, and its advantages are spread throughout the country.

It is of great importance to the practical planter that he should be able to test the accuracy and value of his opinions by comparing them with the opinions of others, equally, or perhaps more observant and skilful than himself. Nothing stimulates the mind more than the collision of sentiments, and the moment of animated discussion often suggests new and enlarged ideas and views, which calm reflection or even severe study had failed to afford. Almost every year improvements are made in some department or another of rural economy. Few persons think of communicating them through the medium of the press, and even if they were so communicated, they might escape notice, or attract little attention. Here they could not fail to receive the consideration to which they might be entitled. A spark falling on fitting materials, kindles a flame—a small seed falling into a fertile soil, may produce a great tree—an opinion entertained doubtingly, on being examined, may lead to important consequences. Every well weighed opinion on Agricultural matters submitted here, should find its place in the records of

the Society—it may at the time be received with little favor, and yet may be pregnant with good—future reflection or the view taken of it or suggested by it to a kindred mind, may raise it to importance and give it activity.

It is not alone the free interchange and discussion of opinions that should distinguish our anniversaries; we ought to embody in our proceedings an account of every remarkable observation or experiment in agriculture, which during the previous year has been made among us. If these observations and experiments be not recorded, the memory of them in a short time passes away—our successors derive no benefit from them, and are left to pursue the same course which we have pursued, and to learn over again for themselves what we might well have taught them.

New modes of cultivation, of draining, of manuring, are constantly presenting themselves. New agents of fertility are discovered and applied, not only among ourselves, but in different parts of the world. It would be expensive and hazardous for the individual to test by experiments the success of these novelties, and to ascertain how far they may be adapted to our soil and climate. When such matters are brought under the notice of our Society, how easy and how important would it be to appoint special committees of our body to examine each particular subject of inquiry—to experiment upon it, if experiment be necessary, and to report the results to the next meeting of the Society. The expense and attention and skill of one member would thus inure to the benefit of all, not only of the Society but of the State. The time and talents of each committee being particularly called to the subject submitted to it, would secure greater care, and stimulate to more accurate observation and fuller details than can be ordinarily expected from solitary and unsolicited enquiry. We have recently had the highest evidence of the accuracy and importance of the information of a new process of manuring, from the skill and experience of a distinguished member of the Society, who has given to a kindred association the results of his intelligent and continued experiments in marling,—and has put that information in the most appropriate shape to be communicated to every planter, and preserved for our successors.

Matters of enquiry on subjects connected with agriculture are absolutely as boundless as the physical history of the earth which we inhabit. Every year is making new discoveries in the diversities of soil—of the elements of which it is composed—of the quantity of the different parts which enter into the composition—of the growth of plants—of what they owe to the air or to the elements of which it is formed—to the light or to its elements—to electricity, and all the agencies in vegetation by which, in the wonderful laboratory of nature, the grain produces fruit after its kind, and the small seed becomes a great tree.

There are some departments in natural history which are too apt to be looked upon with indifference, even by the considerate, and treated with ridicule by the would-be wit, that are yet of the utmost importance to the husbandman. Our Cotton fields are exposed to many enemies—at one time a small catterpillar, that in summer changes into a pretty moth,—at another time a large kind of catterpillar, called the army worm, which produces a butterfly,—at another time an insect called the cut-worm or the cotton louse, attack the cotton plant and blast the hopes of the planter. The Hessian fly lays waste the wheat field,—the locust that has been buried in the ground, as it is said for years, issues from its larva, a winged plague, and spreads

devastation and ruin in its track. These, and insects like these, are undoubtedly governed in their production and ravages and whole being, by laws which are little understood. If we knew these laws, we might be able effectually to check or even to destroy their production—and thence either greatly lessen or entirely prevent their ravages. The accumulation of facts respecting these several destroyers, brought together and reported at our anniversaries, would furnish materials from which science might ascertain these laws. It will be for the Society to determine how far they will direct attention to the collection of such facts.

To increase the number of our Staples is a matter of the deepest importance, not only to every Planter, but to every citizen of the State. We have hitherto been, and must probably continue to be, an Agricultural people. Our Rice and our Cotton have for many years been the chief sources, I might almost say, the only sources of our income, and have furnished a very large proportion of the exports of the whole Union. They have been equivalent to gold and silver in the payment of imported commodities. They have maintained our credit in the foreign market, and prevented the balance of trade from being against us. In this traffic, cotton has been by far the most important article.

The supply and demand of this staple, since its first successful production here, have increased in a ratio which the greatest sagacity could scarcely have anticipated. But, though the demand has generally corresponded with the supply, and maintained the article at a remunerating price to the producer, the continual opening of fresh land to the South and West, in many instances lands more fertile than ours, and the almost unlimited extent of such lands, and the greater crops with equal or even less labor made on them, enabling the producer to undersell us, and yet to realize a large profit on his capital, have all conspired to cause a considerable fall in prices, and recently they have failed with us to give a fair return on the labor and capital employed in raising the article. To such an extent has this been the case, that as the price of a commodity always depends in the first instance on the demand and the supply, and as the demand is not likely to decrease, it has been seriously proposed to plant less cotton and more of some other articles, that the supply of cotton being considerably diminished, the price might be raised, and probably more obtained for a small than could have been obtained for a large crop. Even if this proposal carried into effect were certain of success, it would only raise prices for a limited time, and would tend to stimulate the production of the article in other countries.

The profits of capital and the wages of labor have a constant tendency to equalize themselves throughout the commercial world. But even among ourselves we can procure no combined effort for this object, and the culture of cotton will be stimulated to its maximum, until some other crop is introduced, which will yield a better return. In this culture, then, it is greatly to be feared, that we may not be long able to rival our brethren of the South-Western States. Labor will go where it receives the highest reward. The Planter who can raise 6 or 7 bales of cotton to the hand, can afford to give a higher price for the hand, than the Planter who can only raise 4 or 5 bales. Any demand for the article, beyond what the existing supply can meet, would, of course, raise the price. Should the alleged discovery of Gun-Cotton, accomplish all that has been claimed for it, and should that preparation supercede the use of Gunpowder, and lead to the annual con-

sumption of 3 or 400,000 bales, beyond the present demand, the price would undoubtedly rise, and would yield a better return to the Planter. But our capacity to raise Cotton is so great—we have such bodies of land fit for the culture—that whenever it produced a larger return than the average production on capital, the production of it would be so stimulated, as very speedily to equalize the supply to the demand, and to bring back a reduction of price, and make us again unable to compete, successfully, with the South-Western Planter. It would, therefore, be of the utmost importance to this State, if a new staple could be introduced, that would afford a fair remunerating return to the labor bestowed in raising it.

From the very first settlement of the country, it has been considered by, I believe, very intelligent men, who have examined the subject, as well calculated for the successful cultivation of the Olive. Some efforts have been made to introduce it. These efforts have been unsuccessful, but they have been very imperfect. They were conducted on no regular, understanding system. We had little or no skill in the culture, and we did not seek, or did not procure that skill where it could be obtained. The Olive-tree, if raised from the seed, is slow in coming to maturity—is slow in yielding a return. We have not had the patience to persevere. We have been in haste to receive the reward of our labor. We have been sanguine in beginning our efforts—but we have been too easily discouraged by difficulties; and disappointments, probably unexpected, have caused us to abandon a culture, which, it is earnestly believed, skill and perseverance would have crowned with success. This is a subject of so much interest, and may, by possibility, lead to results of such importance, that I pray the permission of the Society to bring it fully before them.

From the first settlement of Carolina, it has been considered well adapted to the culture of the Olive. In one of the earliest accounts of the country, by Richard Blome,* published in 1678, it is said that the Olive trees brought from Portugal and the Bermudas, increase exceedingly, and will produce a quantity of oil. And Samuel Wilson, who had been for years agent of the Lords Proprietors, repeats nearly the language of Blome, and adds, "the inhabitants take great care to propagate, more so, that in all probability, it will be an excellent oily country." When the charter of Carolina, of 1663, was granted, the other proprietors left the chief management of the colony, to the very able and unscrupulous Lord Shaftsbury. It is well known, that at his request, Mr. Locke drew up his celebrated Fundamental Constitution of Carolina—but it is not as generally known, that for a number of years he carried on an active correspondence with the colony, in which he took the deepest interest, and it is highly probable, that in 1679, he procured Mr. Locke to write his judicious observations on Wine, Olives, Fruit and Silk, with a special view to South Carolina. The troubles in which Shaftsbury was soon after involved, and his death, in January, 1683, no doubt prevented these observations from being published until a long time after. In the description of Carolina of 1682, by T. A. Gentleman, we are told, "the Olive trees thrive there very well. Mr. James Colleton, brother to Sir Peter, one of the Honorable Proprietors, brought an Olive stick from Fayal, cut off at both ends, to Carolina, which, put into the ground, grew and prospered exceedingly. If the Olive be well improved,

* Blome, 207. † 2 Car. Col. 65.

there may be expected from thence perhaps as good oil as any the world yields." Gov. Glen tells us, that in the intense frost of the 7th January, 1747, probably the severest ever felt in Carolina, he lost an Olive tree of such prodigious size, that he thought it proof against all weathers. It was near a foot and a half diameter in the trunk, and bore many bushels of excellent Olives every year." We may conclude, that this was probably one of the first Olives planted in the country, and could scarcely have been less than 60 or 70 years old. Even this terrible Winter would seem not to have killed all our Olive trees, for Dr. Milligan, in Charleston, in 1763, says: "We have plenty of Olives."

When Mr. Jefferson, as has been stated, was in 1785, elected a Member of the Agricultural Society of South Carolina, he, with his characteristic zeal, endeavored to promote the objects of the Society. In May, 1786, he sent them "some seeds of a grass found to be very useful in the South of Europe." He hoped it might be equally useful here; and in the Fall he expected to send them some acorns of the Cork trees, which he was persuaded would succeed with us. On the 30th of July, 1787, he writes to them, through his correspondent, William Drayton, the father of the late Honorable William Drayton, a letter, which well deserves perusal, but which, on the subject of the Olive, is especially interesting. While I would venture to commend the whole letter to your attention, some of his observations on the Olive, I beg now to submit to you.† "The Olive is a tree the least known in America, and yet the most worthy of being known. Of all gifts of Heaven to man, it is next to the most precious, if it be not the most precious. Perhaps it may claim a preference even to bread; because there is such an infinitude of vegetables, which it renders a proper and comfortable nourishment. In passing the Alps, at the Col de Tende, where there are mere masses of rock, wherever there happens to be a little soil, there are a number of Olive trees, and a village supported by them. Take away these trees, and the same ground, in Corn, would not support a single family.—A pound of Oil, which can be bought for three or four pence sterling, is equivalent to many pounds of flesh, by the quantity of vegetables it will prepare, and render fit and comfortable food. Without this tree, the country of Provence and territory of Genoa, would not support one-half, perhaps not one-third, their present inhabitants. The nature of the soil is of little consequence, if it be dry. The trees are planted from fifteen to twenty feet apart, and when tolerably good, will yield fifteen or twenty pounds of oil yearly, one with another. There are trees which yield much more. They begin to render good crops at twenty years old, and last till killed by cold, which happens at some time or other, even in their best positions in France. But they put out again from their roots. In Italy, I am told, they have trees of two hundred years old. They afford an easy but constant employment throughout the year, and require so little nourishment, that if the soil be fit for any other production, it may be cultivated among the Olive trees, without injuring them," and immediately after, he says,—"wherever the Orange will stand at all, the Olive will stand well, being a harder tree." The Honorable William Johnson, in an Agricultural essay, written by him, in 1815, in which he quotes this very passage from Mr. Jefferson, corrects an error into which he has fallen, of a discouraging ten-

* 2 Jef. W. 14; Ib. 193. † 2 Jef. W. 197.

dency, where he says, "the tree begins to render good crops at twenty years old." Judge Johnson* remarks, "this may be true, when raised from the seed; and it may be also true, that they are continually improving to that age; but I have eaten olives from my own trees in six years after I commenced to propagate them, and by raising them from scions, cuttings and root-grafting, the production is materially expedited." It is unquestionable that the Olive flourished in this State from an early period of our history.—The speaker has seen trees in Charleston, bearing, very abundantly, a plump, large fruit, and they looked as vigorous and thrifty as any of our forest trees. No persevering, continued effort has, it is believed, been made to raise them as producing a permanent staple of trade. We have been discouraged, it is to be feared, by difficulties and disappointments which sometimes occur to them in the countries where they are cultivated with the greatest success.

Ramsey tells us that they have "been brought from abroad, and naturalized, and their fruit prepared and preserved equal to imported ones."

Probably the only obstacle to the successful cultivation of the Olive among us, is the occasional severity of our Winter climate. It does not alone depend upon the latitude in which we are situated. It is affected by our proximity to the sea. The Gulf-stream, that passes along our coast, is from 5 to 10 degrees warmer than the adjacent ocean, and influences our temperature. The Northern limit in Europe to the culture of the Olive, ranges, it is said, between latitude 36° and 44° 5′. It succeeds wherever with a mean annual temperature from 66° to 58° F., that of Summer is not below 71°, nor that of the coldest month below 42°. I am not aware that the average temperature of our climate, for the Summer and Winter months, has ever been accurately ascertained. But I am persuaded that in both seasons, it must considerably exceed the height stated to be requisite, and although the authority quoted considers that this temperature excludes America beyond 34°, that would still leave the larger portion of our State adapted to this culture. There are good reasons to think that the North limit of the culture on the Atlantic sea-board of our continent, will be found to be considerably higher. The celebrated Arthur Young, who did so much to promote the progress of Agriculture, published a map of France, in which he represented, by three nearly parallel lines, the Northern limits of the Olive, the Maize and the Vine. The Olive grows in great luxuriance in Provence and Languedoc, which lie to the North of 43°; and the average temperature of these provinces can scarcely be so propitious as that of South Carolina, which lies in so much lower a latitude. Mr. Jefferson saw the Olive growing at Col de Tende. Millar says, that with ease, they are sometimes raised in England, and produce fruit in the open air, though certainly the average heat of an English Summer, is below 71°, and the average cold of the coldest month in Winter, much below 42°. But we have still higher assurance that the Olive will flourish in our State. The Olive, according to the Linnæan system, is a genus of tree belonging to the diandria monogynia class of plants. It is usually divided into three species, but nine species are mentioned by writers, and the varieties are very numerous. The very distinguished French botanist, A. P. de Candolle, says, "however heterogeneous the Olive tribe may appear as at present limited, it is remark-

* Johnson's Essays, 129.

able that the species will all graft on each other, a fact which demonstrates the analogy of their juices, and their fibres; the lilac will graft upon the ash, the chronauthus and the fontanesia, and I have succeeded in making the Persian lilac live ten years on the phyllirea latifolia. The Olive will take on the phyllirea, and even on the ash," and Lindley, the Professor of Botany in the University College, London, quotes and adopts this opinion. The Olea Americana is a native of South Carolina—"a small beautiful tree," says the venerated Stephen Elliott, "of from twelve to twenty feet high. It grows in rich light soils along the sea coast of Carolina and Georgia, and is rarely found sixty miles from the ocean." Various species of the ash abound throughout the country. De Candolle's statement of the facility with which the Olive will graft on every kindred tree, is confirmed by the high authority of Palladius. In his XIIIth book de Insitione of his De Re Rustica, speaking of the Olive, he says:

> Robora palladii decorat silvestria rami
> Nobilitat partus bacca superba feros,
> Fecundat steriles pingues Oleaster Olivas
> Et, qua non novit munera ferre docet.

Which may be thus imperfectly paraphrased:

> Minerva's bough graft on the forest tree,
> And Olives teem where acorns wont to be;
> The Oleaster sees new branches shoot
> And wonders at her gift of precious fruit.

The graft usually partakes of the vigor of the stock upon which it is grafted, and it seems reasonable to expect, that the fruit-bearing Olive, judiciously grafted upon the Olea Americana, a native tree, or even on the ash, would stand our climate. But the matter really appears settled by the testimony of the writers that I have quoted. Mr. Augustus L. Hillhouse, who has furnished an interesting essay on the Olive, to the fourth half volume of Michaux' North American Sylva, indeed, says, (page 199,) "the Olives near Charleston were rendered barren by the vernal frosts, which congealed the young shoots." If he means to inform his readers that after the tree has blossomed, and before the fruit is formed, a sharp vernal frost will congeal (freeze), young buds and destroy them, he informs them of no more than what might happen to any fruit-bearing tree; but if he means that the tree becomes barren, he has been much misinformed, and is undoubtedly mistaken. The loss of the crop for one year, by an early frost, if the tree itself was uninjured, would more probably have the effect of invigorating the tree, and of enabling it next year to produce a large crop. All the authorities that speak from actual knowledge, assure us that the Olive has thriven in our climate, and has produced abundantly. Dr. Ramsey, who spent a long life of usefulness among us, tells us expressly, (2d His. S. C., 303), "Olives have been naturalized in Carolina to good purpose, and stand all seasons." He does not even seem to be aware that severe frost here had ever destroyed any of the trees; and had he been aware of that fact, he would unquestionably have recorded it; so that we may fairly conclude no such frost happened in all his time. After much enquiry, with an earnest desire to ascertain the very truth in this matter, I have been able to find only two Winters since the first settlement of the country, which have been so severe as seriously to injure the Olive. The first was the

Winter of 1746-47, described by Gov. Glen, and the other was the recent Winter of 1835-36. And it is perhaps worthy of remark, that the 7th of February, was the coldest day in the Winter of 1747, and the 6th and 8th of February, were the coldest days in the Winter of 1835. Both certainly did much injury to the Olive trees. But even in climates in which they are successfully cultivated—and furnish the richest return from the soil—where, as Mr. Hillhouse says, " the produce of the soil is said to be one-third greater when planted with Olives, than under any other species of culture," they are liable to be destroyed by severe frosts. Even Provence and Languedoc have sometimes Winters which this tree cannot resist.—The author of an exceedingly interesting treatise on the Olive, published at Montpelier, in 1784, speaking of such Winters, says: (271), I shall only recal, here, that too memorable year, of which the melancholy remembrance yet fills the heart with terror. The Winter, the cruel Winter of 1709, was more fatal to that tree than to any other. It left no resource to the afflicted husbandman. Many saw their Olives, split by the frost, dry to the lowest root, and with no other consolation than the immense quantity of fire-wood from them; and at pages 256 and 257 may be found an account of a number of years in which the frost had done great injury to the Olive, both in France and in Italy. The few trees that in Provence and Languedoc (p. 296), survived the frost of 1709, were so much injured by it, that for six or seven years they bore no fruit. But neither that fatal year, nor the occasional recurrence of years similar to it, has compelled the husbandmen of Provence and Languedoc to abandon in despair the culture of their favorite tree—and Olive oil is still one of their most valuable products. So far as regards climate, it is confidently believed, that the climate of South Carolina—especially that of the sea board—is at least equally favorable with that of Provence and Languedoc. Most probably it is more favorable. And with the example of these provinces of France before us, we have the greatest encouragement to undertake the extensive culture of this tree. Volney, whose observations on the climate and soil of the United States, are distinguished for great accuracy and ability, says, from Liancourt (Duke de la Rochefoucault), that the mercury sometimes falls in Charleston to 4° [Raumur] below zero, and in one night the earth freezes two inches deep—a degree of cold certainly very seldom experienced in our lower country. And he remarks that this circumstance prevents the orange from growing there in the open fields; but it will not prevent the culture of the Olive, especially of the Olive of Corsica, for in 1792, at Corté,* near the centre of that Island, among the mountains, about 500 toises, (nearly 3250 English feet,) above the level of the sea, he had seen the Olive prosper notwithstanding a frost 3° or 4° below zero; and, he adds, that the Corsicans even allege that the snow lying eight days on the ground destroys the insects and assures a crop.

The accounts given of the longevity of this tree, are quite romantic; nay, some of them go far back into that period of history, considered as the proper domain of fable,—the fabulous ages,—and some of them are associated with events of so high a character, that though they can throw no light on the culture of the tree, or its adaptation to our climate, they may interest the Society.

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* Corte 42° 18′ 2″ N.; about 10° farther North than Charleston.

Herodotus, in his Urania,* tells us that in the Temple of Erectheus, in the Acropolis of Athens, is the olive which Minerva produced in her dispute with Neptune for the honor of giving the name to that city. Cicero refers to it in his De Legibus,† as the sempiterna olea, the everlasting olive; and Pliny says, even in his day, Athenis quoque olea durare traditur in certamine edita a Minerva. It was regarded with so much veneration, that when Epimenides had come from Crete to Athens, to purify the city, they received him with the highest honors, and pressed many valuable presents upon him. He would accept nothing but a branch of the sacred olive.—And when Anthony went against the Parthians, he took with him a crown from this tree. Indeed, such was the opinion of its durability, that Pliny says, Argis olea etiam nunc durare dicitur ad quam Io in vaccam mutatam Argus alligaverat—and he adds, without the qualification of dicitur, that the wild olive from which Hercules was first crowned, was then at Olympia, and religiously protected. Traditions of the longevity of the olive, are not confined to the Greeks and Romans. There are yet standing, or were a few years ago, eight olive trees on the Mount of Olives, in the supposed site of the Garden of Gethsemane, which the legends of the country allege, shaded our Saviour when he was on earth, and dwelt among us, and which are still pointed out by the monks to pilgrims, and are regarded with high veneration. This tradition, even in these days of enquiry and scepticism, has not been without its defenders, and it is so curious and interesting, as connected with the present subject, that I cannot refrain from submitting to you a few observations recently made on it. "To this legend it has been objected, that according to the testimony of Josephus, all the trees within some distance of Jerusalem, were cut down by the Romans, to be used in the works raised against the devoted city: and this, together with the improbability that such trees should exist above eighteen centuries, has been considered as conclusive against the claim made for them, though it has not been denied, that they are probably the oldest olive trees in the world." That claim, however, has found an advocate in Dr. Wilde. He says: It is true, that the Romans cut down the wood about Jerusalem, but the timber of our olive trees would be of little value indeed, in constructing engines, towers and battering-rams, to be used against the Cyclopean walls of Jerusalem; and these trees, in particular, must then have been so slender that the besiegers would have considered them unfit for any such purpose. They are undoubtedly the largest, and I may add with safety, the most ancient olive trees in the world. The largest is twenty-four feet in girth above its roots, though its topmost branch is not thirty feet from the ground. The trunks of most of them are hollow in the centre, and built up with stones.

There is nothing unnatural in assigning an age of nineteen centuries to these patriarchs of the vegetable kingdom, whose growth is the slowest of any in existence. They have not borne fruit for some years past; but though their branches are greatly decayed, yet, from the hardness of the wood, and each part being so retentive of life, there is still a considerable head to each, whose light-colored silky leaves hang like so many silver locks over their time-worn and aged stems, that now in the evening of life are fast tottering to decay." Chateaubriand, in his Itinerary of 1806, from Paris to Jerusalem, tells us that these trees are at least of the times of the Lower Empire.

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* Ur. lv. † L. 1, 1.

Every olive tree in Turkey, found standing by the Musselmen when they invaded Asia, only pays one medin* to the public treasury, while the olive tree planted since the conquest, owes to the Grand Signior one half of its product. These eight trees are only taxed eight medins; and this he thinks conclusive proof that they were standing at the time of the invasion in A. D. 1030, which would make them now considerably upwards of 800 years old. These, it must be admitted, are natural curiosities, and evidence only of the great durability of the trees. It is universally agreed, however, that they will last healthy and productive for two hundred years, and are, to use the expression of Pliny, Firmissima ad vivendum.†

Considerable difference of opinion, among the writers on the subject, exists as to the average quantity of oil usually made from one tree. Mr. Jefferson says, tolerably good olive trees yield one year with another, about 20 pounds of oils. Laing, in his notes of a traveller, remarks that a single olive tree will sometimes yield from one crop nearly fifty gallons of oil; and Jahu, in his Biblical Archæology (§ 71,) tells us that sometimes one thousand pounds are obtained from one tree. I have somewhere, I think, seen it asserted, that in the olive growing countries, a single productive tree will maintain a whole family.

When this subject was chosen for the leading matter in my proposed essay for the Society—having, in truth, no resources on it in my own observation or experience—I was anxious to benefit by the observations and experience of the planters, the practical agriculturists among us, who had given any attention to the culture of this tree. James Hamilton Couper, Esq., of Georgia, one of the most intelligent gentlemen and scientific planters of our southern country, had engaged, as I was informed, in this culture. I immediately addressed a note to him on the subject, stating to him the object of my enquiry, and soliciting him to furnish me with such information on it as might be convenient to him. In a very short time he, with the utmost liberality and kindness, made me a communication of the 3d of September last, which I consider of great importance, and which, with his permission, as it was sought for you, I now beg leave to submit to the Society.

"Near Darien, 3d Sept. 1846.

My Dear Sir:—I beg you to be assured that, in complying with your request to furnish you with any facts within my knowledge and my view generally, on the subject of the cultivation of the olive tree in this country, I feel equal pleasure in promoting a patriotic object, and in being able, in however trifling a degree, to gratify your personal wishes.

Having had my attention called, many years ago, to this subject, by an experiment on a somewhat large scale, which my father made in 1825; and having devoted some attention to the works of European writers on the cultivation of the olive, and the manufacture of oil from it, I hope that the following extracts from my note book may save you some trouble in your investigations. I have probably given much that is already familiar to you; but if I have, you must blame yourself for professing that the subject is comparatively new to you.

* A medin is a money—of Alexandria, worth 33 aspres—of Smyrna, worth the one-hundred part of a piastre—and a silver money of Constantinople, worth 3 aspres; one aspre is worth about 9 deniers, and the denier is the twelfth part of a sou.

†Theoph. His. vi, 14. Plin. xvi, 90. Naile, l'Olivier. 2 Jeff. W. 125.

The first and all-important question which presents itself is, whether our climate is adapted to the olive tree: and to what portion of our territory we may hope to extend its cultivation. The facts which will be presented, are, I think, decisive, that the immediate sea-board of South Carolina and Georgia, the whole of Florida, and the borders of the Gulf of Mexico, are as suitable for the cultivation of the olive, as the south of France.

First, as to climate—Arthur Young, in his travels through France, vol. 1, page 311, observes, "several other plants, beside the olive, mark this climate, (the olive climate.) Thus, at Mentelimart, in Dauphiné, besides that tree, you meet with, for the *first time*, the *pomegranate*, the Arbor Judæ, the paliurus, *figs*, and the *evergreen oak*."

The orange tree is found to be more tender than the olive, in France and Italy. The same writer says, "the latter plant (the orange,) is so tender, that this (Hieres) is supposed to be the only part of France, in which it will thrive in the open air. I went to Hieres to view them, and it was with pain I found them, without exception, so damaged by the frost, in the winter of 1788, as to be cut down, some to the ground, and others to the main stem."

Rosier, in his Cours d' Agriculture, t. 7, p. 258, observes, "Dans le village d' Hierès en est même obligé de couvrir les citrouniers, les cedrats, etc., pendant les rigueurs du froid."

Mr. Jefferson, in his letter of July, 1787, to the Agricultural Society of South Carolina, remarks, "wherever *the orange will stand at all, experience shows that the olive will stand well*, being a hardier tree."

Simonde mentions, in his work on Tuscan Agriculture, (Tableau de l' Agriculture Toscane, p. 112,) that the olive is considered in Italy as hardier than the vine. "L'on a souvent mis en question si l'on ne pourrait pas naturaliser l' olivier dans des climate moins chauds que ceux qui lui servent de limites, et l'on etait encouragé dans cette espérance par l' observation qu'en Italie quoique l' olivier souffre d'un grand froid, il est, cependant *considéré comine plus robuste que la vigne*, et qu'en conséquence en le place à des expositions en colle-ci ne pourrait pas croître." He further observes, that he himself had vines and olives planted together, and that the former suffered most from the cold. This writer also says, that the sweet orange does not succeed well in Tuscany, unless it is protected. "Quoique l' orange doux de Portugal croisse quelquefois en plein vent, dans des jardins bien défendus de la bise, cependant il ne réussit bien qu'en espalier, et autant qu'en peut le préserver des grands froids avec des paillassons." Id. page 204.

Bosc, in the article Olivier, Nouveau cours complet d'Agriculture, t. 9, says, that the frost acts injuriously at two periods of the year in France: the first, during mid-winter, whenever the thermometer descends lower than ten degrees below zero, (14° of Fahrenheit,) then, not only the branches, but even the trunks perish, and they have to be cut down. This was the case in 1709, and in 1788, when most of the olive trees in France were destroyed to the ground, (see Young's Travels, vol. 1, page 311.) The second period is during the spring, when the plant is in vegetation. This only occasions the loss of one or two crops, by nipping the extreme shoots: but as injury is more frequent from this cause than the former, the effect is nearly the same. Bosc, who lived sometime in Charleston, attributes the neglect of the cultivation of the olive in Carolina, to this latter cause. "C'est cette cause, ainsi que je m'en suis assuré seu les lieux qui a empêché les plantations d'oliviers tentés en Caroline, aux environs de Charleston, *climat plus chaud qú aucun canton de France, de reussir*."

These extracts, which are from writers of the highest authority, are interesting, as they show from the growth of the fig, the pomegranate, and the orange, that the climate of the olive region of France is no milder than the maritime districts of South Carolina and Georgia, and the whole of Florida. But the actual growth of the olive tree itself, proves this most conclusively, as far as the limited period which has elapsed since the introduction of that plant into this country, admits of a comparison.

I believe that you had some olive trees growing in Charleston for half a century, before the fatal spring of 1835. Ramsey mentions the fruit being pickled from trees imported by Henry Laurens.

At Dungeness, on Cumberland Island, Georgia, a number of trees bore abundantly for many years before that season.

In 1825, my father imported, through a French house in Charleston, two hundred trees from Provénce, via the Languedoc canal and Bourdeaux. They were five months on the way, and did not arrive until May: notwithstanding which, a very few only failed to grow. These trees were planted at Cannon's Point, his residence on St. Simon's Island, latitude 31° 20; and had borne several small crops of olives, when the severe cold of February, 1835, (8° of Fahrenheit,) injured them so much, that it was necessary to cut them down to the ground. They all threw up shoots from the old stumps; and many of them have now attained to a diameter of nine inches. For the last two years they have produced some fruit: and this year, about one-half of the trees are bending under the weight of an abundant crop. About one hundred trees raised from cuttings, are also beginning to bear. It is now twenty-one years since the importation of these trees, and with the exception of the destructive season of 1835, they have never, in the slightest degree, been injured by the cold. The last winter was one of unusual severity,—the thermometer having sunk to 19° Fahrenheit; and although the sweet oranges, on the same plantation, were much injured, some having been cut down to the ground, I could not perceive that a single leaf, among two hundred and fifty olive trees, had been touched by the frost. This experience is certainly very satisfactory, the more particularly, as it is certain that the season of 1835 was the coldest, known on this coast, for at least one hundred years; as is proved by the destruction of orange trees on St. Simon's Island, which had stood since the occupation of that island by Gen. Oglethorpe, and of others at St. Augustine, which dated still farther back.

The effect of one such disastrous year, should not discourage the introduction of so valuable a tree. In the South of France, they have persevered in its cultivation, although, in 1709, and 1788, almost every tree was destroyed to the ground; and they were severely injured in 1740, 1745, 1748, 1755 and 1768. (Nouveau Cours d'Agri, t. 9, p. 194.)

With respect to the danger from the frosts of the spring, alluded to by Bosc, it may be observed, that very fortunately the olive tree is late in putting out its flowers, and that they rarely appear before the end of April, by which time there is little risk from frosts on this coast. The failure of the crop for one or two years would be the only injury.

It may be doubted whether the olive tree can be cultivated beyond the influence of the sea air, on the coast of Carolina and Georgia, with the varieties at present known. But it may be hoped that this plant will, in time, become acclimated; and that, by pursuing the plan of raising from the seed, which has been found to produce hardier plants, new kinds, adapted to a

greater range of climate, may, in time be introduced. The gradual extension of the olive, from the southern to the northern shores of the Mediterranean, would encourage this expectation. The southern coasts of Italy and Spain, which are now the great oil markets of the world, were, during the early periods of Roman history, destitute of the olive. "Sous le règne de Tarquin l'ancien, cet arbre n'existoit point encore en Italie, en Espagne, et en Afrique. Sous le consulat d'Appius Claudius l'huile étoit encore trés rare à Rome; mais du temps de Pline l'olivier déja passé en France et en Espagne,"—*Humboldt, Essai sur le Géographie des Plantes*, 4 *to.*, 1807, *p.* 26.

The suitableness of the soil of our southern coast to the olive tree admits of no doubt. It thrives in every soil which is not wet. "Toute espèce de terre, pourvu qu'elle ne soit pas marécageuse, conviént à l'olivier, cependant comme il donne souvent plus de bois que de fruits dans les terrains futiles, et que ces terrains sont toujours précieux pour la culture du blé, etc., on le plante plus genéralement dans des lieux caillouteux, *sablonneux*, sur les coteaux les plus arides, pourvu qú ils soient exposés au midi ou levant." (Nowveau louis d'Agri., t. 9, p. 184). That the sandy lands of our sea board are adapted to the olive, needs no other proof than the luxuriant growth of the trees on St. Simons and Cumberland Islands.

Should the olive become acclimated to the interior of the States of South Carolina and Georgia, it will find, in the open and gravelly soil of the tertiary slope, between the granite ridge and tide water, its most congenial soil. "Aptissimum genus terræ est oleis cui glarea subest, si superposita creta sabulo admista est." (Columella de re rustica, Lib. 5. Cap. 7. Aldus Venetiis 1514). And in his Liber de Arboribus, Cap. 17, he says, "Olea maxime collibus siccis, et argillosis gaudet, at humidis campis, et pinguibus, lætas frondes sine fructu affert."*

Admitting the suitableness of the climate and soil of the sea coast of Georgia and South Carolina, and that portion of the territory of the U. S. which lies south of lat. 31°, to the cultivation of the olive, the question next presents itself, is the introduction of that tree likely to prove such a source of profit to the agriculturist as to be worthy of his attention? A calm examination of this part of the subject, will probably disappoint those whose standard of profit has been the exaggerated *hopes* of the cotton culture, and who tolerate no delay in reaping the reward of their labor; but it may present a sufficient inducement to devote some time and expense to the subject, to a class of persons less impatient of growing rich, and who believe that the direction of a part of the agricultural labor of the southern States to new objects, is called for by the excessive production of a few staples, and that the introduction of a plant affording a wholesome and nutritious article of food, and which is important to many valuable manufactures, will add very materially to the wealth, happiness and independence of the country.

The distance at which the olive trees are planted, is regulated by the circumstance, whether the ground is to be devoted solely to them, or is to be cultivated at the same time in grain. In the first case they are placed nearer, and in the latter farther apart.

Bosc, in the article quoted above, observes that generally where the soil is fit for cultivation, the trees are placed far apart, in order to grow some other crop in the interval between them; and says that this practice should

* "Sed neque depressa loca, neque ardua, magisque modicos clivos amat."—*Id. Re. Rustica.*

be approved of, both because the olive being subject to fail in its fruit, the whole revenue from the land is not lost, and because it is benefitted by the annual cultivation which the other crops require, and because the greater the distance between the trees the greater their size, and the more abundant and the better the fruit. He adds that the average distance of the trees apart should in rich soils be fixed at 48 feet, and in poor at 36.

Arthur Young mentions that in Languedoc "many fields are planted in rows at 12 yards by 10." (Travels, vol. 2, p. 72.) At Pingean, "In planting, if they mean to crop the land with corn, in the common manner, that is, one year in two, the other fallow, they put 100 trees to 8 seterées of land; but if they intend to have no corn at all, the same number on 4 seterées." (Id. p. 73.) As the seterée is equal to half an acre, this is at the rate of 25 trees to the acre in the former, and 50 in the latter case.

The distance varies very much in other localities, but it may be assumed as a safe ground of calculation, that 25 trees may be planted to the acre when the land is cropped, and 50 if devoted exclusively to the olive.

The product of oil varies very much with the size of the tree, the character of the soil, and the fruitfulness of the season.

In France, Young informs us that at *Toulon*, "they have great trees, that are known to yield 20 livres to 30 livres a tree (40 lbs. to 60 lbs., or from $5\frac{1}{2}$ to $8\frac{1}{4}$ gallons of oil), when they give a crop, which is once in two years, and sometimes once in three,—small trees yield 3 livres (6 lbs.), 5 livres (10 lbs.) and 6 livres (12 lbs.) each." In *Languedoc*, "olives pay in general 3 livres (6 lbs.) each tree per annum; some 5 livres (10 lbs.)." At *Pingean*, "some large and fine trees are known to give 84 lbs. of oil (or $11\frac{1}{2}$ gallons of oil, as the gallon weighs $7\frac{1}{3}$ lbs.); but they reckon in common, that *good* trees give 6 livres (12 lbs.) one with another." In the article Olive, in Michaux's North American Sylva, Vol. 2, page 196, Mr. Hillhouse says, "the mean produce of a tree may be assumed in France, at 10 lbs., ($1\frac{1}{3}$ galls.) and in Italy at 15 lbs., (2 galls.): but single trees have been known, in the productive season, to yield 300 lbs. (41 galls.)."

Young states the produce of a field of 200 trees in Tuscany, to have been, in

1786,	- -	30	*barrels*,	(150 lbs. each,)	or 615	gallons of oil.
1787,	- -	3	"	"	" 61	"
1788,	- -	8	"	"	" 164	"
1789,	- -	25	"	"	" 512	"
		66	*barrels*,	"	1352	gallons, or an

average per annum of 338 gallons, being $1\frac{2}{3}$ gallons per tree.—*Travels, Vol.* 2, *page* 235.

"On a very bad stony soil, though in the plain, I found it took twenty trees of 25 years' growth, to yield a *barrel* of oil ($20\frac{1}{2}$ gallons). But in a fine soil, and with very old trees, a *barrel* a tree has been known."

From these statements, assuming that the district to which I have conjecturally limited the olive culture, has a climate as favorable for it as that of the south of France, we may place the product of a tree in full bearing, as giving a mean annual yield of one gallon of oil, or 25 *galls. to the acre*, when the land is cultivated at the same time in some other crop; or at 50 *gallons*, if exclusively devoted to the olive. Estimating the oil at the moderate price of 75 cents per gallon, and the value will be, in the former case, $\$18\frac{3}{4}$ per acre, and in the latter, $\$37\frac{1}{2}$. But to the first must be added the

value of the corn or other crops cultivated on the same land; and which may be put down at nearly a full crop every second year, as the trees are reckoned in Italy to diminish the grain crop only one-fifth.

It is presumed that the best mode of promoting the general introduction of the olive into this country, will be, to recommend the mixed cultivation. As the olive only begins to bear about the *tenth* year, and does not arrive at its full production before the twentieth to the thirtieth, few persons would consent to expend so much labor before reaping any return.

But under the mixed system, nearly the full amount of the usual crops is made, and the manuring and cultivating of the grain crops, will be sufficient for the olive trees, and the labor of planting the young trees, is almost the only extra work they will require until they commence bearing. The only objection which is likely to present itself at present, is the necessity of excluding all stock from the fields: but whenever our agriculture shall become more enlightened, this will be generally done.

The question may be asked by those who have usually regarded olive oil as merely an article of household economy, of very limited use in North America, whether a ready sale of the oil can be depended on? They may believe with the late Abbe Correa, that our countrymen have "bacon stomachs," and that it will be very difficult, so far to conquer the obstinacy of established habit, as to induce them to substitute pure oil for rancid bacon. If the only use of this oil were for food, it would undoubtedly require time to introduce it into general consumption: but that time will effect it, there can be no doubt, from the intrinsic value of the article. Until then an ample demand for all that can be produced will be found in the annually increasing consumption of this oil in machinery, and in various manufactures, particularly of wool and soap.* Already we import 82,655 gallons, (see Report of the Secretary of the Treasury for 1845,) and as our manufactures are comparatively as yet but in their infancy, and our population increasing with undiminished rapidity, there is no danger of the production overtaking the demand. What the demand may become, is shown by the facts that England imported in the year 1830, 2,791,057 gallons of olive oil, valued then at about $2,500,000—an average of 88 cents per gallon (McCulloch's Commercial Dictionary, article olive oil): and that France, although the production of that kingdom was, as early as 1788, estimated at 75,000,000 of francs, or nearly $15,000,000,† (Peuchet Statistique Elémentaire de la France, p. 327,) has yet imported in one year olive oil to the value of nearly 30,000,000 of francs, or $6,000,000.

Some idea may be formed of the value of the olive tree as a source of national wealth, from the above statement of its production in France, a country on the northern verge of the olive climate. In countries more favorably situated, it is still more important. The small kingdom of Naples exports annually about 7,300,000 gallons of olive oil, valued there at $3,400,000 (McCulloch's Com. Dict., article Naples).

But as olive oil enters largely into domestic consumption, particularly among the lower classes, forming a wholesome and nutritious article of food, it has an importance far exceeding its merely commercial value. The

* Hereafter, perhaps, when the whale fishery shall be exhausted, for lights.

† Chaptal estimates the quantity of land cultivated in the olive in France, at 43,000 hectanes, or about 106,000 acres, which gives an annual income per acre of nearly $14.—*De l'Industrie Francaise, t.* 1, *p.* 207.

ample home production of the necessaries of life, is the true foundation of national independence and happiness: and whatever adds to the unstinted enjoyment of physical comfort, it becomes the well wisher of his country to cherish more sedulously than those articles which have a merely money value. It may safely be asserted that the United States owe their great happiness and prosperity more to the cheap abundance of Indian corn, and the consequent full supply of animal food, than to all of the staples which figure so largely on the list of foreign exports.

Mr. Jefferson, with equal beauty and patriotism, observes, "If the memory of those persons is held in great respect in South Carolina, who introduced there the culture of rice, *a plant which sows life and death with almost equal hand*,* what obligations would be due to him, who should introduce the olive tree, and set the example of its culture! Were the owners of slaves to view it only as a means of bettering their condition, how much would he better that by planting one of these trees for every slave he possessed! Having been myself an eye witness to the blessings which this tree sheds on the poor, I never had my wishes so kindled for the introduction of any article of new culture into our own country."—*Letter to the Agricultural Society, So. Ca.*

If the facts given above are sufficient to prove the importance and practicability of cultivating the olive among us, no impediment is presented by the difficulty of propagating it, as it is readily increased by seed, by cuttings, suckers, portions of the root, or by grafting. The mode of raising by the seed is only resorted to in order to produce new varieties, or as stocks for grafting, as the fruit from seedlings, although yielding an oil of a more delicate and higher flavor, is usually very small. Grafting improves the quality of the fruit; but is not so generally resorted to as propagation by suckers and cuttings. The last is the most practised. Limbs from an inch to an inch and a half in diameter, are cut into lengths of from 12 to 15 inches. Trenches five feet apart and six to eight inches deep being prepared, the cuttings are placed in them, about eighteen inches apart, and in an oblique position, so that when the earth is filled in, from one to two inches will remain above the ground. On the exposed end a little gardener's cement should be smeared, to exclude the water; and over the whole some moss or loose sand is drawn, for some time, to diminish the evaporation. In dry weather the cuttings should occasionally be watered, until they have taken root. Until the third year nothing more is required than to cultivate among the young plants, and to trim them to a single stem. When three years old, the young trees should be planted out in the usual way, at distances of from 30 to 48 feet. The holes should be made large and deep, and had better be dug several months before the trees are put out. The subsequent cultivation consists in removing the suckers, trimming out the dead wood, in manuring moderately once in 3 or 4 years, digging around the roots annually, and in ploughing once a year the intervals, unless a crop of grain is cultivated among them. Much difference of opinion exists in France, on the subject of pruning: but unless it is deemed desirable to keep the trees low for the facility of gathering the fruit, or to diminish the risk of their being blown down by high winds, all that appears to be necessary is to remove the decayed wood, and to keep the head of the

* The underlining is my own. One who has cultivated rice for 25 years, must feel the force and emphasis of this beautiful figure.

tree moderately open, for the free admission of light and heat.* With us the liability to severe gales of wind, will recommend low trimming: and the same evil will probably lead to the practice of grafting on seedling stocks, the tap root of which will ensure the stability of the future tree. From cuttings, in thin soils, the roots will be too superficial for safety.

The manufacture of this oil is extremely simple; and requires no very complicated or expensive machinery. The latter consists of a mortar, a revolving stone, or some other contrivance for separating the pulp from the stones, and of rendering it a paste: a revolving stone, like a bark or cider mill for crushing the stones: a lever or screw press for the pressing of the oil from the pulp and stones; bags of coarse cloth or hair to contain the pulp; and wooden or earthen-ware vessels for receiving the oil from the presses, and for separating it from the mucilage.

As soon as the Olives are ripe, which is indicated by their becoming of a dark color and soft,† they are gathered by hand, and spread out over floors to the depth of a few inches. In this situation they remain three days, being turned daily, and the decayed berries carefully picked out.—They are then placed in the mortar or under a stone, and moderately triturated, until the pulp is reduced to a paste, and is detached from the stones. The stones having been removed, the pulp is then put into coarse and strong bags, and placed under the press, which should be worked very slowly at first. From the press the oil mixed with mucilage runs into wooden vessels, half filled with water. After standing from 12 to 24 hours, to give time for the mucilage to separate from the oil, the latter is decanted into other vessels, and remains undisturbed for about 20 days. It is then ready to be decanted again and finally put into the barrels in which it is to remain.—During this repose, nearly all the mucilage will have been precipitated; but the oil is still liable to be *troubled* until it has been exposed to the cold.

The oil from this expression is of the first quality. The pulp or *cake* remaining in the bags from this first pressure, is then broken up, moistened with warm water, returned to the bags, and again pressed. The oil from it is nearly equal to the first, and may be mixed with it.

The stones having been reduced to a paste by grinding under stones, are pressed in the same way, and yield an inferior oil, of a harsh taste, and running rapidly into a state of rancidity.

The quantity of oil which may be extracted from a given weight of the fruit is stated by M. Sieuve (Nouveau Cours d' Agriculture, Article, Huile), as follows: 100 lbs. of sound olives gave 76⅛ lbs. of pulp, and 22 lbs stones. The 76⅛ lbs. of pulp, when pressed, yielded 21¼ lbs. of limpid oil of the 1st quality. The stones, having been ground, gave 6 lbs. 14 oz. of kernel, and 14 lbs. 4 oz. of woody fibre. The kernel and woody fibre gave 5¾ lbs. of inferior oil. Together making 27 lbs. of oil from 100 lbs. of olives.

The refuse of the manufacture forms a valuable manure.

The above is a mere outline of the mode of cultivating the olive, and of extracting the oil. To enter fully into the subject, would occupy many sheets of paper; and such detailed information is probably foreign to your purpose, which, it is presumed, is to recommend it to the attention

* Virgil appears to have been no advocate of the pruning hook.

"Contra, non ulla est oleis cultura: neque illæ
"Procurvam expectant falcem———" [*Georgica, Lib.* 2, *v.* 420.

† On St. Simons the season of maturity is October.

of the South, by presenting for consideration its most important features ;—and to go no farther into minutiæ than may be necessary to an accurate knowledge and correct appreciation of it.

If, however, I am mistaken, as to your views, it will give me pleasure to furnish you, hereafter, with any further details.

To those seeking the fullest and most practical information on this subject, I would recommend the perusal of the Articles Olivier, Huiles and Moulins in the Nouveau Cours d' Agriculture, 13 vol., 8 No., Paris, 1809. They form a most excellent treatise, and are from the pen of Bosc, to whom I was introduced at Paris, as one of the most able and distinguished of their Agricultural writers. Bosc has taken the articles of the celebrated Abbe Rozier as his basis, but has retrenched from them much that was useless, and added much that is valuable. Should your State Society be disposed to patronize the Olive—and I trust that your address will so incline them—a translation of these essays, accompanied by two or three plates, which would form a pamphlet of some 50 pages, will place the public in possession of the best attainable information—information not now existing in an English dress, as far as I am aware.

The experiment made by my father—who, although 88 years no longer allow of his taking an active part in field operations, is still deeply interested in the subject,—has proved so satisfactory, that it is my intention to prosecute it on a larger scale. We have succeeded perfectly in pickling the Olive, and in making from it the finest oil I have ever tasted. This season I expect to make several hundred bottles of oil ; and if I am not disappointed by a hurricane, I hope this winter to submit a sample for your critical judgment. Having now about 250 trees of various ages ; and intending to increase them, I hope in a few years to be able to test conclusively the question of the Olive culture in Georgia. The experiment will not be a costly one, as the ground occupied by Olives is cultivated at the same time in other crops.

The following quotation from Columella, with which I will close this very long communication, (in which I have without mercy emptied out upon you my note book), is consolatory to the experimenter ; and will, I am sure, recommend "the first of all trees" to that large class of persons, who, although having their full share of a desire for good things, are equally adverse to labor and to risk :

"Longeque ex omnibus stirpibus *minorem impensam desiderat olea*, quæ prima omnium arborum est, nam quamvis non continuis annis sed fere altero quoque fructum afferat, eximia tamen ejus ratio est, *quod levi cultu sustinetur, et cum se non induit, vix ullam impensam poscit.* Sed et siquam recipit, subinde fructus multiplicat. Neglecta compluribus annis non ut vinea deficit, eoque ipso tempore aliquid etiam interim patrifamilias præstat, et cum adhibita cultura est, uno anno emendatur. *Quare etiam nos in hoc genere arboris diligenter præcipere censuimus.*" Col. de re rustica Lib. 5. Cap. 7.

Requesting that you will at all times command me whenever I can be useful to you, I am with great respect and esteem,

My dear sir, your ob't servant,

J. HAMILTON COUPER.

M. King, Esq."

The facts and information given by this excellent letter, are full and satisfactory on the culture of the Olive tree, and the adaptation of that culture to our climate. They are full of hope and encouragement. They show, without any reasonable doubt, that our Southern country is well adapted to this culture—that it promises a rich reward to the labors of the husbandman—and, that, if successful, it could not fail to add greatly to our wealth and prosperity. Permit me, I pray you very earnestly, to press it upon you.

Under your direction, an experiment on a scale commensurate with the importance of the undertaking, might be made, if experiment it can be called with the evidence now before us. Let a Committee of the Society be appointed to superintend and conduct this experiment. A small tract of land on some of our sea islands might be selected for it—our members along the sea board might individually turn their attention to it, on their own plantations, with the least possible interruption to their other pursuits. The more extensively the experiments are made, the more satisfied will the mind be with the results. All the information necessary to conduct these experiments with the requisite skill, can be easily obtained. Young trees might even be procured from Corsica, as the most likely to stand the variations of our climate.

That the eye of the master maketh the horse fat—that the footstep of the planter is the best manure, are maxims as old, at least, as the days of Aristotle;* and our own Franklin has repeated the well known aphorism:

He who by the plough would thrive,
Himself must either hold or drive.

It may be laid down as an axiom, that he, who, in the present state of our knowledge, would succeed in the culture of the Olive, must attend to it himself. Skill, care and perseverance, must combine, under providence, to secure to us the blessing of the Olive tree; and with them, success, I confidently believe, is certain. Who can estimate the value of that success?—The happy introduction of this culture, under your auspices, Gentlemen, would illustrate and hallow the annals of the Society. It would open a new era in the industry of South Carolina, and entitle you to the gratitude of posterity!

This is the age of discovery, and improvement. The mind of man seems to have received a fresh impulse from the circumstances by which it is surrounded—from the events by which it is educated—and to have started forward in a new career of knowledge and power. Man wields, at pleasure, the mighty energies of steam—he makes the lightning his messenger—and measures the distance of the stars. Agriculture, according to its nature, under his direction, partakes in this onward movement. New modes of culture are introduced—new agents of fertility are employed. The results of intelligent observation, and of multiplied and well-conducted experiments, are carefully recorded, and garnered up, in able and widely circulated works, for the use of the practical farmer and future inquirer. Science is exerting all her powers to promote the advancement, and crown the labors of this—the noblest of all the arts. Who shall set limits to its progress? Who shall say hitherto shall it come and no further? Who can anticipate the extent

* Πέρσῆσ ἐρωτηθεὶσ τι μάλιςα ἵππὸν πιαίνει, "ὁ τόῦ δεσπότὰ ὀφθαλμὸς" ἔφη—ὁ δὲ Λίθυς ἐρωτηθείς πόία κόπρὸς ἀρίςη, "τὰ τοῦ δεσπότὰ ἴχνη" ἔφη.—(Arist. Oik. C. VI.)

of the future conquests of mind over matter; or of the command which man is destined to wield over the elements created for him, and given to him to control and to enjoy? Let him fearlessly and faithfully pursue his high destiny. Let him never despair of anything that lies within the limits of possibility. Let him be true to himself, and use without abusing the means which Heaven has bestowed, and has given him the capacity to discover and employ; and he may go on, from one degree of excellence to another, until he has drained the noxious fen, and purified the tainted air, and subdued and fertilized the barren wilderness, and made the desert to rejoice and blossom like the rose, and spread peace, and plenty, and health over the face of the whole earth.