

Opposers of the illustrious van der Veldes made quite a lion of him at first, but a more entertaining lion was sure to come and take his place before long.

One weary day, as he was purposely roaming about the great docks of Rotterdam, he thought:

"Why not sail away in one of these vessels, and see if there is any future for you in another country?"

So it came to pass that Jan sailed over the wide ocean to see the world—too late!

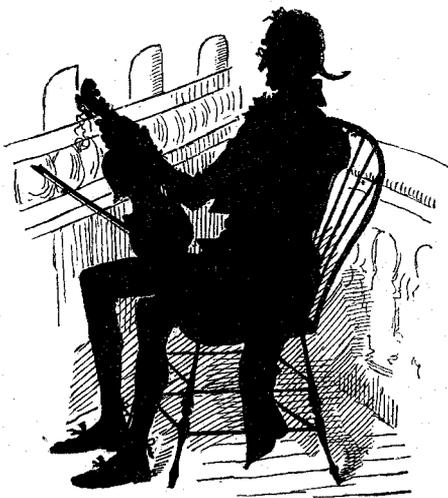
Poor, unfriended as he was, he tried to make the best of life. He was a dreamer. The world only tolerates rich dreamers; poor dreamers come to nothing. So Jan de Lesken came to nothing, like many another man. He turned for help to the instrument that had caused him so much misery, but among men who had lived and learned, he knew nothing.

He dreamed his life away, playing here

and playing there, barely earning his livelihood, till one day he obtained a place in the orchestra of the old Wallack Theatre. As the years went on, the old feeling of what he had been grew duller and duller, till it seemed a forgotten dream.

One night, he heard a song.

Fresh and strong, the memory of his life's story returned to him; for in this song he recognized a simple melody the great violinist had played the morning of the day, fifty years ago, that should have been his wedding-day. Father and bride and friends were long since dead, and he, who had nothing to live for, sat there, where they made people merry for money, and scratched away at his fiddle. Were you ever in the old Wallack Theatre? Did you never see the bent old man in the left-hand corner of the orchestra, who played the violin with trembling hands, or sat there lost in thought? That was old Lesken.



A NEW AMERICAN INDUSTRY.

IN the old time, when New England orchards bent low with burdens of ripe apples, the farmer sent away barrels of the best fruit in trepidation lest the market be overstocked. Usually the fruit made small returns, and frequently it disappeared altogether before a purchaser could be found. The cider-mill grew fragrant with heaps of apples, and under all the trees they lay in golden and rosy masses, not

worth the gathering. Then it was the thrifty housewife came to the rescue with her needle and ball of twine. The "apple-paring bee"—a device to save the too abundant crops—became a high festival, at which young men and maidens met to slice apples and make love. Then every farm-house hung out festoons of "halves" and "quarters" to yellow in the sun.

But fruit-drying has now become a novel

and prosperous industry; from the domestic economy of that time, has sprung new wealth, and from dried apples have come delicious confections as yet without a name.

Since the old days when Norsemen navigators named New England "the Vine-land," this country has rejoiced in an abundance of fruit. Three million peach-trees bloom each spring on the sunny plains that lie between the Delaware and Chesapeake Bays. The apple crop of the country is almost past counting; our surplus fruit if rightly saved, would keep all Europe in table luxuries. The birds on New Hampshire hills are feasted with raspberries, while the mountains of North Carolina and Tennessee are purple with blackberries that go to waste. The time has been when an extra good crop of peaches in Delaware meant a million baskets of fruit left untouched upon the trees.

The primitive work of drying fruit in the sun is still followed in many parts of the country. Maine is noted for its sliced apples; New York is the chief dried-apple state, and sends its sun-dried product for export in halves and quarters. Ohio and Michigan, Illinois, Indiana and Kentucky, produce large quantities in the order in which we name them. Georgia makes a sun-dried apple of a fine gold color, and North Carolina, with only seedlings and wild fruit, produces sliced dried apples and peaches delicately colored from light straw to pale flesh color. Everywhere in Tennessee, North Carolina and Georgia, one may see at the farmsteads rows of boards tilted up to the sun and covered with sliced fruit. Sometimes it is spread between sheets of muslin to keep away the insects and to give the fruit a finer color. These small lots of fruit are collected by the country store-keepers, and thus find their way to the great cities and a market.

The first improvement made in drying fruit was tried in the North, and consisted of covering the fruit with glass. The hot-bed sash idle in the barn found a new duty. Wooden boxes or frames made to fit the sash were prepared and set upon legs to raise them above the ground. Holes were cut at the front near the bottom, and at the back near the top, to secure a current of air through the frame; within these glass-roofed frames the fruit was spread on trays in the full sunlight. The glass kept out rain, birds and insects, and the fruit dried more quickly and with less labor than in the old way, and with a decided improvement in its appearance.

Experiments were also made with stoves. The cooking stove dried the fruit more quickly than the sun, but it was wanted for other purposes. The next step was to erect drying closets. A small inclosed place or closet of any convenient shape or size was put up in the farm-house or shed, and in this was placed a small stove. The sides of the closet were protected from the fire by brick-work and above the stove were placed shelves for the fruit; inlets for the fresh air were made at the bottom, and at the top ventilators were provided for the escape of the heated air and vapor. Such appliances answered a very good purpose, and are often used to save the surplus fruit of a small farm for domestic use or for sale.

Besides these domestic appliances, there is now in use a very good iron stove or drying machine, costing about seventy dollars, and serving to dry all kinds of fruit in a much better manner than the wooden closets, which are liable to take fire. This stove is portable, and may be used out-of-doors or in a building, as is most convenient. A fire is kept up in a fire-box at the base, and above it are movable shelves for the apples, peaches, berries, corn, grapes, or other fruits or vegetables. A constant stream of hot air passes through the apparatus, sweeping across the trays of fruit and quickly extracting all their moisture. The smoke-flue from the fire passes through the escape for the hot air and materially assists the movement of the air. Dryers of this form are largely used in the peach districts of the East and the grape-growing country of the Pacific coasts. They are easily managed, and will dry as much fruit in a day as a family can peel and slice in that time.

Between Chesapeake Bay and the Delaware is a broad and level peninsula,—the center of the peach-garden of the continent. Here the peach-trees stand in rows a mile long, luxuriating in a warm and mellow soil and a genial climate. Every farm counts its hundreds or thousands. There are forests of twenty thousand trees standing in prim and stately lines. The plowman, guiding his horses between the trees, seems to be traveling off to the next county. Here also, blackberry and strawberry, pear and raspberry, spread wide in the mild and sunny air, growing up to new stateliness, or covering the ground with a fruit and foliage in a luxuriance unknown to New England gardens. The white and sandy soil, free from stones, invites to culture. Plants and trees grow as if it were a pleasure to reward

the labor spent upon them. Here and there the pines make a pleasing contrast with the monotonous peach-groves, and immense fields of wheat and corn alternate with acres of strawberries.

Each farm in the vast peach-garden, which covers the whole of Delaware and a part of Maryland, Pennsylvania, and New Jersey, has an average of a thousand peach-trees. Some large estates count ten, fifteen, or twenty thousand trees in one block. With a fair crop, there will be five million baskets of peaches on these trees. A good crop will yield six million baskets—more peaches than the nation can eat while they are in good condition.

When, in April days, the blossoms of these million trees foretoken an abundant crop, the good news is telegraphed all over the country. It is a new spur for trade and commerce. The basket factories drive a lively trade, the steamship companies rub up their rusty engines and lay in new stores of coal, and the railway lines buy or hire more freight cars. A million dollars will soon be poured into the lap of Delaware, and every one hastens to reap his share of the golden harvest. The farmer, long waiting for a return on his invested money and labor, sees the daily swelling crop with sparkling eyes; the express companies re-organize their routes; through trains for New England, for northern New York, Chicago and the West are arranged on fast timetables, that the peaches may be moved quickly to the waiting markets; June and July slip away, and the peaches swell and yellow in the sun; huge steamboats appear on the Delaware, and engines stand on every switch with steam up and cars waiting.

Suddenly, at four o'clock in the morning, there appears at some way station in southern Delaware, a multitude of farm-wagons, ox-carts, and teams of every description. In the early morning light there is a scene of lively competition to get to the depot, each man striving to bring his load of fruit first to the car. It seems as if all the country-side had turned out in mad haste to reach the station. At last the heavy train is off for the Delaware Breakwater, where, in a wonderfully short time, the thousands of baskets of fruit are transferred to the steamship, which steams away along the sandy shores of New Jersey toward New York.

The arrival is heralded in all the papers. The peaches have come! On the same day long trains of fruit-cars pull up at Baltimore and Philadelphia, or steam away at express

speed for Boston or the West. From day to day the excitement spreads. More and more peaches ripen, and every car and steamboat is packed to the utmost. Around every rural station in the peninsula and at every steamboat landing there is each day a scene of hurrying, confusion and uproar. The rural mind seems to lose its traditional calm in the haste to realize the immense harvest of fruit poured out upon the land. The farmer already counts his gains, and thinks of the release of the mortgage on the farm, or of new home luxuries for wife and little ones. All, from rich to poor, share in some way in the harvest, for every man, woman and child is employed in some fashion in securing the crop. Even the public school closes its door, for all the boys and girls are picking peaches.

Suddenly a mysterious blight seems to fall on this vast activity. The mails and telegraph bring sad news to all the farms. The farmer is paralyzed as by enchantment, and sits idle in bitter disappointment, while the peaches drop unheeded from the trees. The steamships bank their fires, and all the children wonder at the sudden stop in the glorious fun in the orchards. The market has broken. There are too many peaches. They do not sell for the cost of picking. The poor man can have peaches in plenty; but every peach he eats costs the farmer more than the price paid in the city. Perhaps in a few days the market recovers, and the steamships sail again with fragrant cargoes; but the shipper has grown timid, and refuses to trust his fruit upon a shaken market, where perhaps not even the cost of the freight can be recovered. At last the season ends in disaster. A million baskets of peaches have been left to decay under the trees, and another million has been sold at a partial loss. The crop was too abundant. It perished before it could be consumed.

A good crop of peaches is estimated at something over six million baskets. Vast as this product is, it could be easily disposed of in our eastern markets if distributed over a longer time. The Delaware peach crop is over in about forty days. It must be sold and eaten in that time, or it will perish. If it could be packed in barrels, like the apple crop, and shipped abroad, the problem would be solved, and the Delaware peninsula would be a bonanza of rural wealth. The peach is too frail and delicate for export, even for home consumption, and formerly a good crop on all the trees meant a broken market and unprofitable prices. This has had a tendency to

check the culture of the peach. There were too many trees by half a million or more. Unless the crop could be in some way saved, it was useless to cultivate so many orchards.

Under the stimulus of this state of affairs canning and preserving sprang into activity, and these industries have done much for the peach-growing interest. Drying in the sun and in such stoves as we have described has been tried; but the result, while it is good as far as it goes, does not meet the difficulty. Mere domestic saving on small farms may be useful; but when a man has ten thousand peach-trees in bearing at once such devices are practically useless. It seems to be a habit of the American mind to turn instinctively to machinery in every business and manufacturing difficulty. To peel, slice, and spread in the sun even a hundred thousand baskets of peaches by hand labor, would be utterly beyond the reach of the entire rural population of a state. How, then, can a million or two be saved? Something of this kind must be done, or a portion of the Delaware peach-groves must be suffered to grow up to scrubby pines.

The peach season of 1877 was a good one. There was a fair crop, and the market was maintained without a break and at very fair prices. In one sense it was a remarkable season, for it showed what has been done to save the surplus fruit crop, and the experience points the way to a new and even more brilliant future for this great interest.

The season opened hopefully, and the growers felt sure of a paying crop. A new market had been found close by the farm, and by judicious management the disaster of a crowded market could be avoided. Again the teams thronged about the railway stations and the long peach trains rolled over the level country. The steamships sailed up the coasts with golden cargoes, and the demand was active and promising. If the news from the city hinted of an excess, there were other buyers about the stations and landings, with ready cash in hand. The farmer whose consignments to the market were large or of doubtful value, turned his horses from the struggling throng about the cars and boats and drove away to a quiet farm near by.

Here among the orchards and berry-fields is a two-story frame building with a tall chimney smoking furiously; at the door is a platform or landing for teams, so that the fruit may be conveniently unloaded. At the roof of this factory are one or two singular-looking ventilators, with blinds and shutters

spread wide; every window is open, and there comes out the sound of a merry industry. The peaches are quickly unloaded and taken into the building. The farmer gets his money for the load and drives away contented.

Within is carried on the new industry,—science and machinery applied to fruit preserving on a commercial scale. The fresh peaches are brought into a large room on the first floor, and are poured, a basket at a time, into a curious machine called an assorter. This machine sorts or separates the peaches into three sizes, without injuring the ripest "Crawford." Having been thus sorted, the fruit is taken to another room to be peeled and cut in half. Here a hundred girls and women are seated at long tables, each with a basket of fruit before her, and all busily paring and taking out the stones of the peaches. Each peach is then cut in two parts and put in a dish. A man comes around every few minutes and takes away the refuse and stones or gathers up the cut fruit. The soft and dripping fruit—for it is at its ripest stage—is taken to another room where shallow trays made of galvanized iron wire netting inclosed in wooden frames are placed on tables. Here, other girls pack the halved peaches close together into the trays till they are filled.

Near by are two square closets or shafts reaching from floor to ceiling, and extending from top to bottom of the building. At the sides of each shaft are four iron chains of a peculiar pattern, and in front is a low door. Presently, a tray is loaded with the cut fruit, and two men, taking it in hand, open the door and slide it into one of the shafts. A furious blast of hot air rushes out into the room, and, for a moment, we can look into the dark shaft. There are four iron chains inside next the walls, and on each are iron fingers projecting horizontally into the shaft. The trays rest on these fingers and are thus suspended in the shaft, very nearly filling it. As soon as the tray is in place, the door is closed and the attendant looks at the clock and makes a mark on a wooden dial to record the movement of the tray. When he puts in the tray, he also examines a thermometer hung inside and makes a note of the temperature. For several minutes the shaft remains closed while another tray is being prepared. Meanwhile, we may examine the evaporating apparatus, above and below.

Down-stairs in the basement is a brick furnace resembling the furnaces used to heat

dwellings in winter. In this, a bright fire is burning. Inlets are provided at the base for fresh air, and, as the top of the furnace is open and leads directly into the shaft above, the heated air rises and mounts swiftly through the shaft, and finally escapes through the ventilators at the top of the building. On its way, it sweeps through the trays of fruit that are suspended in the shaft.

Now to the top of the building next to the roof. Here the shafts are still seen passing upward through the floor and out into the open air above the roof. On this floor are doors in each shaft, and an iron hand-wheel for moving the elevating chains. A man is in attendance, aided by a number of girls as helpers. There are a clock and a wooden dial, and by these guides the attendant gives a turn to the wheel once in a certain number of minutes; presently he opens the door in one of the shafts. A sudden blast of warm air, heavy and moist with the watery vapor escaping from the fruit, rushes out. By taking a quick look we may see the inside of the shaft. It is full of trays of cut peaches, one above the other. The top tray is level with the door, and the attendant remarks that it is ready to come out. Above the door, the shaft may be seen open to the top, where the ventilators give free escape to the vapor-laden air; the man quickly draws the tray out into the room and closes the door.

The work is finished. The ripe peaches are now in proper condition and will not decay. They are said to be evaporated. When they entered the drying-shaft they filled the tray, touching each other at every point; now they are shrunk and lie flat and thin on the wire netting. Taking up half a peach that a short time ago was a plump and juicy "Crawford" or "Clingstone," we find it dry, very nearly of its natural color, flexible, and glistening with tiny drops of crystallized sugar. It is candied in its own sweet juices, preserved in its natural state without the addition of sugar, syrup, brandy, or any other preservative. It is not a cooked peach, but a raw, ripe peach, deprived of its water; everything that it held when fresh, mellow and ripe is retained, save the pure water that formed so large a portion of its bulk. In its present condition it will remain unchanged in any climate and for an indefinite time, provided it is kept dry.

The girls in attendance slip thin knives under the evaporated fruit and clear the hot tray of its fragrant load. The fruit is then packed securely in strong paper-bags, to

keep away insects and dampness, or stored in bulk in tight, dark closets till it is packed in wooden boxes for the fall or winter market.

It now may be well to examine, first, the philosophy of the work, and, secondly, its financial aspect in regard to the peach, apple, and berry crop of this country.

There are several forms of these fruit evaporators, but this is the oldest, and is a good type of them all. The apparatus that has been described consists essentially of an upright wooden shaft or tower erected in a three-story building. At the base is some form of hot-air furnace, with proper inlets for fresh air. The air passes over the furnace, becomes heated, and ascends through the shaft and escapes at the top of the tower. When the temperature of the interior ranges from 250 to 300° Fahrenheit, a tray of fresh fruit is suspended on the elevating chains just above the furnace. At this temperature the fruit would be cooked instead of dried, were it not for the fact that it is dripping with moisture. It is bathed in a steaming vapor and begins to dry, not on the outside, but from the inside first. The air, saturated with water, keeps the pores of the fruit open and the surface unchanged. There is no formation of a hard, dry, and discolored skin, as when fruit is dried in the open air. In this high temperature, in a few minutes, the fruit would begin to cook; but before this can happen, the elevating chains are moved and the tray is raised about thirteen centimeters (five inches), and another tray is placed below it. The first tray is now shaded from the direct heat and the lower tray gives off clouds of vapor that rise and bathe the fruit above in a hot and steaming atmosphere. In a certain number of minutes, regulated by the heat, the kind and quality of the fruit, and the state of the weather, the two trays are raised another thirteen centimeters, and another fresh lot of fruit is inserted below. The first lot is still more shaded from the heat, but remains in an atmosphere saturated with moisture from the new supplies below. Thus the fruit rises a few centimeters every ten or fifteen minutes, moving continually away from the fire, and yet always bathed in vapor from the fruit under it. In from four to six hours it rises to the top of the shaft, and is by this time finished. It has parted with all its water, and has undergone an entire change in its nature. When fresh, four-fifths of the ripe peach consisted of water. It also contained a certain percentage of

acids and a certain proportion of sugar, starch, and other chemical constituents. After passing through the evaporator, it is reduced to four-fifths of its original weight, the loss being almost wholly in water. The fibrous skeleton of the fruit remains, but the acids are reduced and the sugar has increased in quantity. The other portions—starch, etc.—are nearly unchanged, the color is retained, and there is still a trace of the fragrance of the ripe fruit. The process the fruit has passed through seems to resemble a supplementary ripening. The familiar instance of the after-ripening of winter pears in a dark closet, where the hard and sour pear becomes sweet, juicy, and mellow, may serve to illustrate the chemical change that takes place in this process. The evaporated peach is dry, but riper and sweeter than when fresh. Every valuable quality of the fruit is retained; the water alone has been extracted. Soak the dry peach in enough cold water to cover it and it assumes its natural size and flavor. It is then practically a ripe peach, with the water restored. It makes no difference when the water is replaced; it may be now, next year, or ten years hence, in this or in any other climate; add the water to the dry peach at any time, and it may be cooked and eaten in any form that fancy dictates.

This process of preserving fresh fruit is no longer an experiment. The work is carried on upon a large commercial scale in all parts of the country. Its success has naturally incited new inventions in the same field. The oldest and best known evaporator consists essentially of an upright shaft from 6.30 to 8.82 meters high, and from .94 to 1.57 centimeters square on the inside. In this are four elevating chains that pass up the inside and down the outside of the tower. These chains have fingers of iron which, as the chain rises, assume a horizontal position, and thus serve to support the trays of fruit placed in the tower. These evaporators cost about one thousand dollars each, and are usually built in pairs, so that one fire may serve for the two shafts. The fruit is prepared and put into the evaporator on the first floor and is taken out on the top floor. This machine has been in practical use for several years, and was the first that showed a decided advance on the crude method of drying in the sun and under glass. It embodied the correct scientific principles upon which this work of drying fruit must be carried on, and all the later machines simply introduce mechanical changes without departing from its principles.

The nearest approach to this original evaporator is a machine that employs the trays to form the shaft. The furnace is erected in the basement of the building and above it is a square opening just the size of the trays in the first floor. The fire is started and a tray loaded with fresh fruit is placed over this opening and completely closing it. When the fruit has dried sufficiently, a simple and ingenious piece of mechanism is employed to raise it a few centimeters. Another tray is slipped under it and the first tray is then supported by the one below. In this manner tray after tray is put one under another till the piled-up trays reach through a second opening in the floor above and part way into the top story. The trays thus make their own shaft, and the hot air from the furnace must pass up directly through them, and as the trays fit tightly one on the other a material economy of the heat is claimed for the apparatus. This machine has also an arrangement for spreading the hot air evenly through all parts of the shaft formed by the trays. The top tray is always open and exposed to view and the ventilators are omitted, the vapor freely escaping into the room and thence out the windows. The operator has also a view of the work at all its stages. Such an evaporator with trays 157 centimeters (5 feet) in diameter may be put up for something less than the other pattern.

Another form of evaporator employs two towers or a double shaft. The trays are suspended in sections on an endless chain in the two towers. The door is placed on the first floor just above the fire, and in use the trays are put into one shaft and then pass down over the fire and into the second shaft. They then move upward, as in the other forms of evaporators. At the top the trays pass over into the first shaft and descend to the door where they were put in. Certain advantages are claimed for this evaporator over the others. It is cheaper than the first style and does not require so high a building, as the double tower rises above the roof and stands quite alone. The machine may be easily put up and taken down in a few hours. The cost ranges from \$400 to \$800, the three sizes having a capacity of 40, 60 and 100 baskets of peaches in a day of twenty-four hours.

Besides the two evaporators mentioned, there have been others invented, some employing a horizontal shaft with a fan-blower to drive the hot air through it and with the trays moving on a track inside;

others more or less resembling a mechanical cracker-bakery or oven.

An evaporating "plant" in Delaware usually consists of a two-story frame building capable of accommodating from 40 to 100 hands and from one to four machines. With two machines and 80 helpers, four being men, 8,371 baskets of peaches have been dried, giving about 13,906 kilograms (27,800 lbs.) of dried fruit in one season of only forty days. The labor required for such a plant is usually four men and from 50 to 80 girls and women. The men are required to attend to the machines and the women to peel and cut the fruit. One town in southern Delaware having fifteen evaporators of all kinds turned out 100,000 kilos, (200,000 lbs.) of evaporated fruit in the season of 1877.

This work, valuable as it is to the peach-growing interest, is not confined to that fruit; apples, raspberries, currants, plums, blackberries, grapes and cherries, are preserved in large quantities in this manner. Ripe tomatoes, corn, Lima beans and other vegetables, treated in this way, may be exported to any climate, and will come back to their original condition when placed in water.

The city fruit-dealer and housekeeper may here remark that this is all very well for the fruit-grower; but is the evaporated fruit really good to eat and will it sell? At first it was difficult to find a market for this product. The people did not know what it was. They naturally thought it simply sun-dried fruit, and like such fruit, not wholly attractive. It took a long time to convince the retail trade that the new product could be sold, the price asked was thought to be excessive, and the city buyer was conservative and would not touch the "processed

fruit"; added to this was the fact that the owners of the evaporators, ignorant of the best methods of conducting the work, produced burned and badly colored fruit, and thus injured the reputation of the new product. Finally, the merits of the process and the excellence of the fruit became known and since that time the demand has steadily grown.

The evaporated fruit is no longer an experiment for courageous housekeepers or a doubtful venture on the markets. The common sun-dried fruit produced in such large quantities, already finds a market in Europe, South America and Australia, and this better and higher-priced product will undoubtedly follow it. Thus our millions of peach-trees will pay a surer return than ever; we may even need other millions of trees to supply the new foreign demand.

Any one may see at the confectioners' sugared fruits from France, neatly packed in fancy paper boxes and commanding fancy prices. These confections, that are now all imported, can be produced in the evaporators. Ripe pears, dipped in boiling sirup and then passed through the evaporator, come out a conserve as rich and delicate in flavor as the foreign article. The citron, black as it is, is a favorite with the confectioner. From the evaporator comes a new citron, silvery white.

It cannot be said that the present machines mark the final stage of the work. This part of the matter is yet in the field of experiment; only the processes that have been described have reached a commercial position. Enough has been done to show that a new industry has been established which will ultimately prove of the greatest advantage to the consumer, the exporter and the horticulturist.

MAURICE DE GUÉRIN.

THE old wine filled him, and he saw, with eyes
 Anoint of nature, fauns and dryads fair
 Unseen by others; to him maidenhair
 And waxen lilacs and those birds that rise
 A-sudden from tall reeds at slight surprise
 Brought charmèd thoughts; and in earth everywhere
 He, like sad Jaques, found unheard music rare
 As that of Syrinx to old Grecians wise.
 A pagan heart, a Christian soul had he,
 He followed Christ, yet for dead Pan he sighed,
 Till earth and heaven met within his breast:
 As if Theocritus in Sicily
 Had come upon the Figure crucified
 And lost his gods in deep, Christ-given rest.