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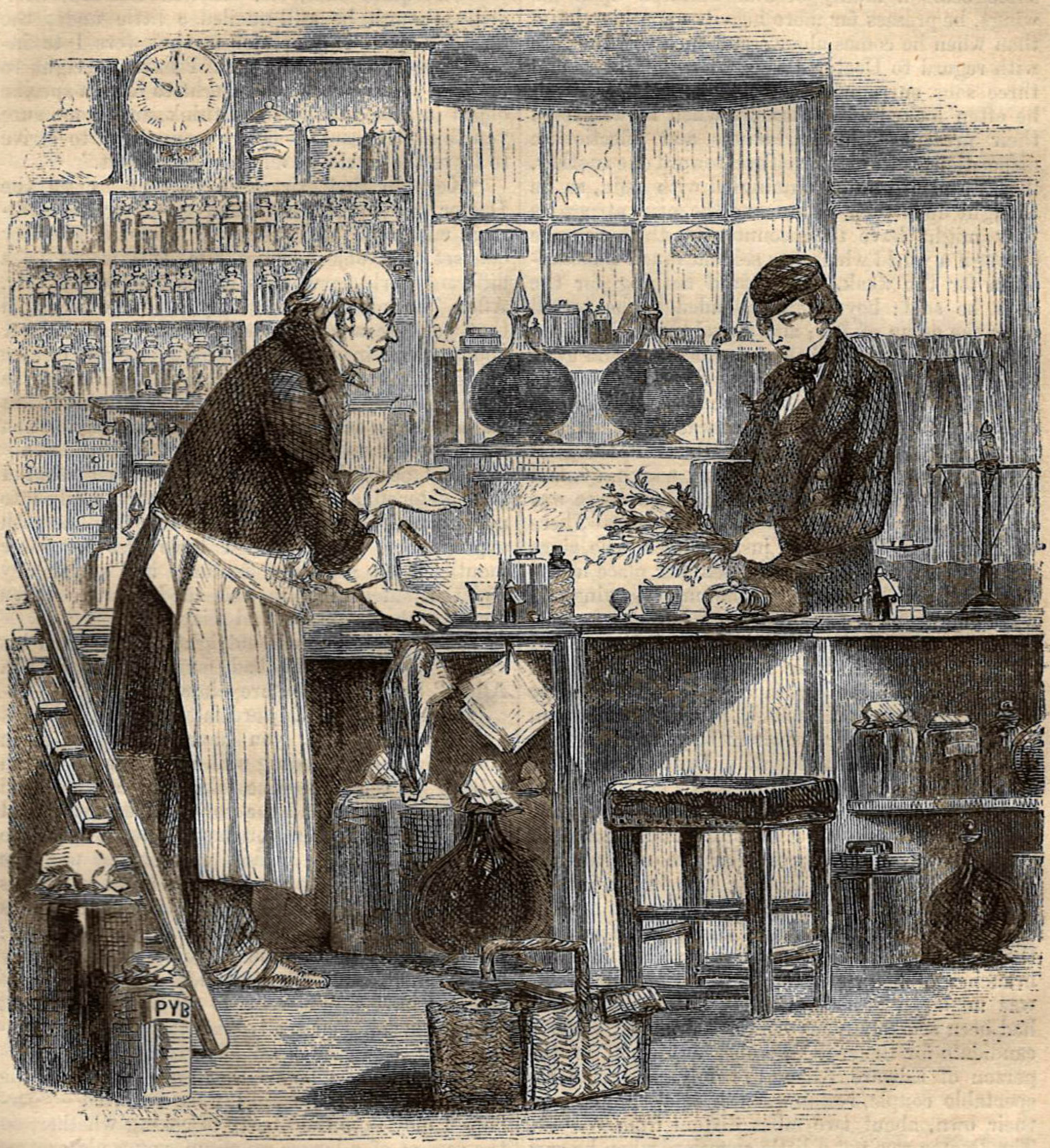

EDWARD ALLEN'S LATE RETURN FROM A BOTANIZING EXCURSION.

THE STORY OF A CLEVER YOUNG MAN.

CHAPTER I.

JOHN JERVIS, surgeon-dentist and apothecary, (by courtesy "Doctor" Jervis,) had been for many years the proprietor of the solitary medical establishment in the thriving little town of W——; and although limited means had prevented his ever completing his education, and in consequence he had taken out no medical diploma, yet such was

this we cannot say with any degree of certainty; perhaps the manifest improvement of the outer man may also be the type of a nobler and diviner work in the inner self. It is ours to work hard and pray hard, and the promised blessing will assuredly follow.

The last feature I would mention in connection with "Our Ragged School" is one, unfortunately, not peculiar to ours exclusively, and may have to do with the reader of this sketch. We teachers are most of us employed morning and afternoon in other Sunday schools. We are not tired of our work, but we think that "ragged business" should be carried on by other agency. There are many unemployed Christians who ought to use their time and talents in labour of this kind; but, alas! many prefer collecting "crumbs of comfort" for themselves, instead of dispensing the "bread of life" to others. They forget that while we are engaged, morning, noon, and night, watering others, we have but little time left to water ourselves; but if we do it not, ragged yet immortal humanity will "perish for lack of knowledge." Slothful Christian! come down to N—— Street, letter S, and help us.

THE LITTLE AQUARIUM IN THE PARLOUR WINDOW:

ITS FORTUNES AND MISFORTUNES.

CHAPTER I.

HOW WE ARRANGED OUR LITTLE AQUARIUM; AND ITS EARLIEST INMATES.

I DEARLY love the sea; I love it in sunshine and storm, when its waves are rippling softly or roaring wildly. I love to look at its beautiful weeds, and to examine the forms and movements of the living things which dwell in its waters, and I delight to remember that they are all made and provided for by the God who created and sustains me and mine. What wonder, then, that each summer, as it came, found me gazing down into the hollows of the rocks, when the tide had scattered largely the spoils of the waters. Often as I have surveyed these, I have felt sorry that the next high tide would not only cover them from my sight, but would probably tear away some of those bright sea-weeds, and would certainly bear off with it many of those marine animals whose actions so much amused me. There seemed no chance of watching through the life of any one of them, unless it might be of some stone-piercer, which made the holes in the rock; or of some limpet, which clung so tightly to its surface; or of one of the patient sea anemones which were chained there, and were opening their flower-like rays to the sun, and seemed to have no other business in the world than just to grasp the food which the wave brought within their reach. And yet, as I have looked again and again at them, I have thought too that they had other uses, if they satisfied the love of beauty which God's creation is so fitted to gratify, and if they led us to inquire into their nature, and thus to improve the minds which he gave us to cultivate.

Many a time have I carried away from these pools some curling, twisting star-fish, or gay anemone, or scaly gliding fish, to place in a shallow vessel of water that I might watch it. But I never kept any of these creatures long in life, for I had not considered that, in order to maintain animal life in the waters, there must be some vegetable life there; not merely a piece of floating weed, but a living, growing plant. Animals, whether on earth or in the water, constantly by their breathing exhaust the oxygen of the air, and render it impure and unfit to sustain life. But plants form and give out oxygen, and thus render either earth or sea fitted for breathing. It is the same with the fresh as with the salt waters, and it is well known that vegetation in a pond renders the fish which inhabit it numerous and healthy.

Wiser naturalists than I had duly considered this, and made known their plans for grouping together in the waters both plants and animals; and it was after reading some interesting experiments of this kind that I said to myself, "I will make an aquarium; but how shall I begin?" I was near the sea, so that, happily, I had no need to make artificial sea-water. It was easy enough to procure the water, but how should I arrange the contents of my aquarium? I had smiled at the simple efforts of a neighbour, who, in his construction of one, had arranged it in layers as a sailor would do what he calls a sea-pie. First, our friend placed a layer of stones, then a layer of seaweeds, then a layer of crabs, and above these, various smaller and lighter animals. As I have often had occasion to observe, however, it is much easier to smile at the want of wisdom in another, than to be wise for one's self, and so I found it, when a series of mischances befel my own aquarium, owing to my want of judgment and experience.

Having procured a glass vessel which would hold two pails of water, and fixed it on a wooden frame, I placed at the base some small beach-stones, mingled with a small quantity of sea-sand. The stones were first well washed in clean sea-water, and even brushed over with a soft brush, as I knew it would be important that nothing should adhere to them which, by decomposing, would render the water unwholesome.

"Charlie," said I, to a young friend, "will you help me to furnish my aquarium? Will you carry down some jars and bottles to the rocks, and bring a hammer to break away stones on which sea-weeds may be growing?"

Charlie did not require to be asked twice; so, taking with us a large basket, we set off on our undertaking.

First of all, we collected a few pieces of coloured granite, which lay near a breakwater, and which we thought would serve us for little rocks. Then we looked for large rounded pebbles, on which tufts of sea-weed were growing. Some of these stones were beautifully coloured with incrustations from lying in the sea, but, wherever we could do so without injury to our plants, we scrubbed them gently in clean sea-water. Of these we constructed some handsome artificial rocks, raising some up above the surface of the water, in order that such animals as the periwinkle, which need an occasional breath of air from the land, should be able to mount up and enjoy it. We grouped them as tastefully as we could, so as to leave little archways, nooks, and crannies, among which the fishes might glide, and which might serve as hiding-places to such little creatures as did not court daylight, nor approve of prying eyes.

We now began to search for small stones covered with sea-weeds. As the rocks about us were mostly formed of chalk, and we were unwilling to admit a material which, by crumbling, might thicken the water, we were some hours before we found stones enough. We were even finally compelled to admit pieces of chalk, which had become hardened by the long alternations of the sun and wave upon their surface. We rejected all the dark olive sea-weeds, not only on account of their large size, but because I knew from experience that they render the water slimy. Some of our common red sea-weeds, finely branched,

and which resemble miniature trees, and some of those larger bright grass-green sea-weeds which look like thin leaves, were eagerly sought after. Some of our fragments of rock were like little mounds from a grassy meadow, being covered with the soft, silky, green hairs of the rock joint-wort (*Conferva rupestris*), while a quantity of the much larger, longer, and brighter sea-weed which the fishermen call water-gut (*Enteromorpha intestinalis*), grew on some of them. This last sea-weed looks at first sight like masses of blades of grass; but these are, in fact, tubes, and are seen, when under water, to be rounded and hollow, while at all times we can see that they have no veins running down them as grass leaves have. The red sea-weeds contrasted very prettily with these. We took the most common sorts, as we inferred they were the most hardy, and would give us the least trouble. Clumps of the common hair-flag (*Plocamium coccineum*), and tufts of the scarlet hair-wort (*Dasya coccinea*), are common on all our shores, where they are blown about by every wind, and, when brought fresh from the rocks on the pebbles to which they are attached, they are well fitted for a vase. A few other common red weeds, difficult to describe, but known by sight to all ramblers by the sea, and generally called vase-weeds (*Ceramium*), added much to the grace of our vegetable groups; and some tufts of that common plant, the jointed stony coralline (*Corallina officinalis*) proved a useful and ornamental addition. This is really a plant, though it is a mere vegetable film, incrusted with stone. It grows in pools all about our shores, and is there of a beautiful lilac tint, but it lies on the beach bleached either to pure white or dirty yellow. Pretty as the red sea-weeds were, they were not more so than those gauze-like green lavers, or wash-worts, which, when they fringe the rocks, are stirred by every motion of wind, and which floated gracefully up and down in our aquarium, when we lifted them up, or when some tiny fish crept beneath them for shadow. Some of these plants have curled, others flat edges. They are always plentiful, sometimes so much so that the fisherman rails at them, in no gentle language, for hindering his nets from making their way. The species which has wide flat leaves is commonly called oyster green, and the prettier kind with curled edges is known as the lettuce laver.

"Now, Charlie," said I, "suppose we let these sea-weeds grow for a time in the water before we collect any animals; no doubt there will be some living things, or the germs of some, hidden among these, notwithstanding all our care in cleansing them."

But Charlie was at an age when waiting and watching are very irksome, and action very pleasant; so we finally agreed that we would go next morning again to the sea-side, and collect some marine creatures.

It was a bright sunny morning when Charlie and I, laden with our jars and bottles, set off for the beach. We knew that we must be very careful of some of the more delicate animals, lest they should be injured by contact with stones or with large or rough shells. Some require, also, to be thrown immediately into clear pure water, and kept there, and must not be allowed to come in contact with mud. Crabs and star-fishes would do very well for a time in wet sea-weeds, but prawns and some other creatures needed more careful treatment, and a bottle of clean salt water for their peculiar use. We did not know at that time, though experience taught us afterwards, that too many animals should not be put in one bottle; and that considerable care is needed in planning for the inmates of a small aquarium, lest some should be too large or too voracious, and thus overpower the others. However, as the French proverb says, "The first step is the only difficulty;" and a good deal of observation, and a little intelligence, will teach us more perplexing things than these.

The first living creature that was presented to our notice was that beautiful zoophyte, the thick-horned anemone (*Actiniæ crassicornis*), lying upon the pebbly beach, having apparently been torn by the waves from its home on the rock. It was indeed a lovely creature, and was now fully open, moving its thick and numerous feelers, and looking like a large flower cut out of wax, and delicately tinted with pure white and rosy pink hues. Its feelers were as thick as goose quills, and the entire animal was as large as a small tea-saucer. It was covered with little dots or glands, and small pieces of shell and sand were clinging to it, which, when we removed them, left it a most attractive object. We were greatly tempted to take it for our aquarium, but, considering the limited size of the vessel, we thought our specimen would consume too much of the vital air in the water. We therefore delivered it over to the waves, with a faint hope that it might yet find some harbour of refuge, although we had a misgiving that we were yielding up the poor animal to its natural enemies—the crabs and star-fishes. Had it remained seated on its native rock, it might, perchance, have been the devourer instead of the prey; for anemones will eat crabs and fishes, and have even been known to swallow large scallop shells. It was well that we rejected this animal, for I found afterwards that this species is not well suited for an aquarium, and that, though it will sometimes survive its removal thither, yet it will only do so when taken on the piece of rock to which it is attached. Some anemones of this species are very beautiful in tints of rich purple and yellow; and they will sometimes resent molestation by squirting on the intruder a shower of water; for their feelers are like tubes, and when these empty themselves, they shrink into nearly half their usual size. When in an aquarium, they soon turn out the stomach, which is like a two-lobed bladder, and die in a few days. On this morning, therefore, we only took a few of those fig marigold anemones which are common on rocks all round the coast.

And now we began to consider whether we should take any of the crabs which were running in awkward sidelong motions over the sand, or which dropped out from among the large olive-brown sea-weeds when we lifted them. I had my doubts whether they were fitted for a general aquarium, and whether they did not require a vase of water to themselves, but we thought we would give them a trial. Some little harbour or shore crabs (*Carcinus maenas*) looked rather inviting; for although when full grown, as we see them carried in baskets for sale, they are of a dark unpleasing green colour, yet they are somewhat prettier when young, and their thin shelly coats are mottled over with white. We found them of all sizes and in great numbers in the pools among the rocks, where the last high tide had left them. We had read of their strange transformations, and how, in the earlier periods of their existence, they are so unlike the fully developed crab, that they were long believed to be distinct animals, and had received scientific names from naturalists, who never suspected that they were crabs at all; and no one who saw the figures of these creatures, which Professor Bell has given in his work on the "Stalk-eyed Crustaceans" in their different conditions, would wonder at this mistake. Then the singular renewal of the crust which incloses the crab, and which is cast off as he grows older, and needs a larger one, offered an inviting subject for examination. Charlie and I had read of these things, and consequently felt much interest in the whole race of crabs, so we resolved to venture on admitting a small long-legged spider crab This animal could scarcely be called handsome,

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1. Ulva latissima.
2. Plocamium coccineum.
3. Harbour Crab.
4. Spider Crab.
5. Hermit Crab.
6. Actiniæ crassicornis.

for it so much resembled a spider that few would care to touch it. It was about the size of a large garden spider, having a triangular body, with long slender legs, which were very rough and hairy, and large eyes. It moved about among the rocks very slowly, and was covered with a complete little forest of sea-weeds and corallines which grew on its back and legs. A small harbour crab, too, in a similar condition, attracted us, and we took it on account of the odd appearance of its tufts of sea-weeds. A friend named this creature "Birnam Wood," in allusion to the old story of the men who came upon their foes at Dunsinane, and each bearing a bough from the forest, seemed as if

"Birnam Wood had come to Dunsinane."

This little crab was running sideways, with all his might, when we first saw him, but he soon became conscious that we were looking at him, and seemed to pause and hesitate as to what he should do. When we seized him, he laid down his claws, and, remaining quite motionless, pretended to be dead. However, we treated him tenderly, and, placing him in a little bed of wet sea-weed, bore him away. A larger crab of his kindred, however, which was running along desperately, made great resistance on being caught, and fought with his pincers so courageously that Charlie dropped him, and renounced his intention of carrying him home for supper.

The spider crab and "Birnam Wood" amused every one who looked into the aquarium, by their curious movements; and we began to congratulate ourselves on having procured them, till one morning, on going to look at some other creatures which we had just introduced, we discovered how much mischief the crabs had done. They had torn down some of our beautiful green lavers, rooted up the delicate red sea-weeds, rent in pieces a small plant of the olive sea-weed, called the serrated fucus, which we had placed in the water on account of a beautiful little coralline winding about it; had knocked down a serpula which had been given us on the previous day, and killed a shrimp, to say nothing of their having frightened some sea anemones which were just settling themselves in their new home, and were very composedly displaying their beauties, till the attacks of these crabs caused them to enfold their feelers and become mere fleshy cones. These two little creatures did us so much mischief that we found we might really have admitted with greater safety some of the large starfishes, which are the scavengers of our shores, and which, by craft and strength, draw so many living things into their toils.

Assuredly no owner of a small aquarium, who wishes to have a "happy family," should invite into its circle any crab more than half an inch long; for not even those who have skill to bring together the raven and the dove in seeming peace, could contrive to subdue the voracity, or to soften the tempers, of these dwellers by the sea. Notwithstanding our past experience, we however determined on possessing some very small hermit crabs. So lively an account is given of this animal in the "Leisure Hour" for July, 1853, that we will merely remind the reader that this creature is compared to the hermit because it dwells in a solitary cavern as a hermit might do. But another of its names, the soldier crab, is equally expressive, for it is of a very unpeaceful nature. Little cares this crab how boldly he may have to fight, either in defence of house and home, or in attacking the empty castle which another of his kind may also covet. The peculiarity of all these hermit crabs consists in their having the body covered with a thin membrane instead of a calcareous crust, so that their tender bodies would be easily injured had not the Great Creator implanted in them the instinct which leads to their protection. When young, this crab ensconces itself in some periwinkle or other spiral shell, holding itself in by a strong tail, which is covered with a crust, and hanging its legs out at the opening of the shell. It soon outgrows its home, which it exchanges for another, and another, until finally the crab becomes so large that often nothing but a whelk shell will hold him. When a fresh shell is needed, he sets off in search for one, which he will fight for most zealously if it is contested by an enemy. Many naturalists believe, too, in the cannibal propensities of our hermit, and maintain that he eats his enemy; and, fierce and voracious as he evidently is, this ill report would seem not altogether unlikely.

We had no difficulty in finding soldier crabs. There they were, from little creatures scarcely larger than a pea, to specimens which measured a full inch across. A touch of the claw hanging out of the shell caused it to be jerked in, where it became so firmly fixed as to resist all our endeavours to pull it out. Indeed, a large crab of this kind nipped us so fiercely when we made an attempt to do this, that we were glad that our fingers were encased in gloves, and, notwithstanding this defence, we were quite conscious for some time after of having been nipped.

Taking with us a few empty shells for their use, we carried some small ones away to our aquarium, where they seemed perfectly contented, and, for a while, quite harmless. One of them grew much faster than his neighbours, and we were amused one day by seeing him snatch most fiercely at a large shell. He next put his claw warily all round the inside, and, finding no obstacles, took possession of his castle, running rapidly into it as if he expected some one might deprive him of it. He remained there for more than an hour, but great was our surprise to see him after this time quite unsettled, and shortly making a fierce grasp at another shell. He was so embarrassed by his riches that one after another was tried and rejected. As the other crab remained quietly at home, no contest arose, and both now lived and grew quietly, through several changes of dwelling, till, in an evil hour, one of them nipped a hole in a favourite anemone. This served as a signal for dismissal, and Charlie carried them both off to a rocky basin, once more to become soldiers of fortune. It is not impossible that they shared the fate of some of their kind, for we saw boys around the pool gathering whelks and clamps for bait, and the crabs would scarcely escape their eager observation.

A HAMBURG BOOKSELLER.

In the year 1783 there dwelt in the valley of the Schwartzburg, in Germany, a worthy man, who held an office of no great value in his prince's service, and whose name was Frederick Heubel. He was not married, but a maiden sister kept house for him. The only other inmate of their humble dwelling was a boy of eleven years of age, small in stature, but active and vivacious in his movements, and endowed with a lively fancy and a vigorous imagination. The boy was the only son of a widow, who was Heubel's half-sister, and who, having been left with a pension of about three pounds a year, and two children, could not afford to bring him up. Heubel had kindly taken him off her hands, and charged himself with the responsibility of rearing him. Diligently did the kind man set about the task, himself undertaking the duties of instructor, and imparting carefully the first elements of knowledge. The