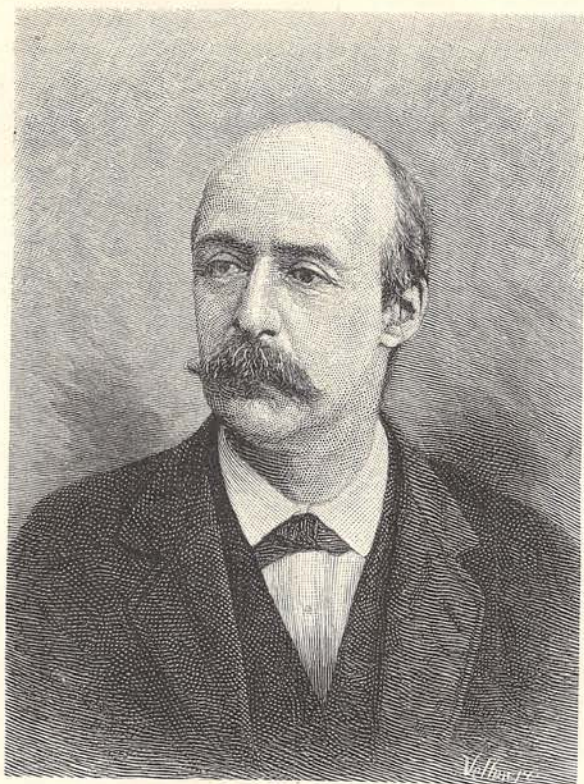


PROFESSOR AGASSIZ'S LABORATORY.



ALEXANDER AGASSIZ. (FROM A PHOTOGRAPH BY NOTMAN.)

STUDENTS of the geographical distribution of animals find that the key-word to their department of science is *temperature*. That is to say, the most important of all those combined circumstances of food, altitude, soil, etc., which affect the localization of a species, or cause a fauna to be made up as we find it in any particular district, is the matter of average heat and cold. This is particularly true of marine organisms, which, in a general way, are not only less active in winter than in summer, but far more abundant near the surface,—both in variety of kinds and in number of individuals,—than at chilly depths, and in warm waters than in northern and colder seas. The Gulf Stream, therefore, forms a very important factor in estimating the distribution of the animal life of the ocean, since its warm current permits many a southern form to wander far to the northward in its genial track; just as, conversely, a range of high mountains, such as the Rockies, enables many a snow-loving ani-

mal to creep almost to tropical limits along the lofty ridges, defying by the aid of cold altitudes the arbitrary limits which latitude used to set to the “zones” of organic life that were supposed to encircle the globe.

There is thus found to be a startling difference in the oceanic fauna north and south of Cape Cod; the bather who has tried the surf at Nahant and then at Newport needs no thermometer to understand the immense contrast of temperature between the two coasts. The reason is plain: into Massachusetts Bay pours the icy flood from Labrador and the berg-haunted banks of Newfoundland, while the south shore is washed by the great tepid current from the tropics, which the Cape swerves off until it strikes straight out to sea to warm the Irish coast. North of Cape Cod, one picks up on the beaches, and dredges from the bottom of the bay, few sea-animals (at least of invertebrates) except those of arctic habit, and these grow more abundant as he proceeds northward;

while he misses dozens and dozens of species that he knows may be collected merely by crossing the narrow peninsula which has stood for ages in some shape, a barrier to the southward extension of northern forms and to the northward travel of those animals whose home is in the southern seas.

The naturalist, then, who would study to greatest advantage the pelagic life of our part of the Atlantic must go south of Cape Cod; and if he proposes to remain in New England, he is practically restricted to the mouths of Buzzard's and Narragansett bays, since the coast of Long Island affords few advantages for his pursuit, and the Sound is too land-locked. It was with an appreciation of these facts that the late Professor Louis Agassiz settled upon Penikese Island, below New Bedford, Massachusetts, as the site of his Summer School of Natural History; and the profusion of species of marine animals and plants procured there proved his wisdom, so far as the question of locality was concerned. When Professor Agassiz died, however, and his son and successor at the Museum of Comparative Zoölogy in Cambridge, Mr. Alexander Agassiz, undertook to continue the enterprise and pursue his own investigations at the same locality, he met with difficulties.

It was discovered that, owing to inaccessibility and other circumstances, the expense of continuing the school would be too great to make it profitable in any sense, and that the oversight of so large a class involved a greater tax upon his time than Mr. Agassiz could afford. The school was therefore closed, and a position was sought which should be equally rich in material for study, but more convenient for the erection of such a laboratory as is about to be described,—a laboratory which should not attempt to carry out the widely educational idea of the elder professor, but should simply be the best desirable workshop for Mr. Agassiz and such of his assistants and advanced special students at the Cambridge Museum as he could find accommodation for. These facts are plainly stated in order to dispel a current error that the present institution is only a weak perpetuation of Professor Louis Agassiz's school at Penikese in 1873.

After very careful examination, the terminus of The Neck, at Newport, R. I., was fixed upon by Mr. Agassiz as the most suitable location. Here a promontory of solid rock, well clothed with turf, stands out boldly from the coast line. With the open ocean westward and in front as you look toward the south, and the entrance to the harbor, divided by Conanicut and other islands from the

shining breadth of Narragansett Bay, beside you on the right, few points on our coast or any other give a more inspiring outlook. In 1812, some defensive earth-works crowned the bluff, giving the name Castle Hill to the promontory, the crest of which is now occupied by Mr. Agassiz's summer home. On the harbor side, at the bottom of the hill, a little winding cove "makes in,"—a mere rift in the rocks, so deep that no unsightly mud-banks are left exposed, and where boats can easily make a landing at low tide. Here stands the laboratory, sheltered from the ocean's winds, but overlooking the beautiful harbor.

No one would suspect its purpose from the appearance of the building; all the prettiness of tasteful sea-side architecture—many-gabled roof, outer stair-ways, external beams and braces, latticed porticoes, and slate-brown paint, overgrown with masses of vinery—feign romance rather than the realism to which it is devoted. A few rods away, nearer the shore, stands a windmill—not such an old-fashioned, shingle-sided relic as those which used to flap their massive arms in the face of frightened horses all around the ancient town, but a new and ingenious contrivance of iron, which, if it adds nothing to the fair picture, at least does not disfigure it. This refinement of a windmill, moving readily under the touch of a zephyr that the nerves of the old Hollandish structures never would have recognized, supplies to the laboratory the pure water and steady currents of air that preserve its vitality. The soft clucking of its musical motion is rarely silent, for day after day the south-west summer breeze comes lazily but steadily in, as though Newport lay under the track of a trade-wind.

Out from the windmill, some twenty-five yards into the harbor channel, runs a pipe which is bent up vertically at the end, and capped with a pair of Ts, through the screened, hanging tips of which the clean sea-water is sucked in in such a way that no sea-weed can enter and clog the pipe. Through this pipe the windmill will draw ten gallons a minute, at a moderate speed, pumping it into a cistern in the attic of the laboratory which holds about 1,400 gallons. When this is full, the overflow—for the mill goes on regardless of the demand—escapes into an open sink downstairs, so that the condition of the cistern is always apparent. The water used in the laboratory, however, does not come by direct flow from the bottom of the cistern, but is drawn through a siphon. This secures the regular pressure and avoids the variation of "head" at different stages of water which would result from the other method. This water (as I have

already mentioned) is all clean sea-water, salt as the open ocean and is incessantly renewed.

The windmill also drives an air-pump, which forces the air into a drum, whence it escapes to the laboratory under an equal and steady pressure (secured by proper valves) of five pounds to the square inch. These arrangements for a constant and uniform supply of water and air under easy control are the foundation of the facilities here afforded for the continued and successful study of living marine animals.

There is a large cellar-basement, useful for dissection of great fishes and general storage, and a third story having a suite of chambers charming for an artist's or other delicate work for which a good light and the encouragement of pleasant surroundings are needed; but the "laboratory" proper is a room perhaps forty-five feet long by twenty-five wide, entered from the ground, with which its floor is level on the uphill side of the house.

The southern side of this room is occupied wholly by glass shelving, closets, etc. A part of the shelves hold the working library,—not many books, nor in fine bindings, but in all sorts of languages, full of strange diagrammatic figures and Latin names, of anatomical descriptions and tables of classification,—unentertaining volumes to the layman, not at all of the sort which form the "summer reading" of the publishers, yet costly and precious, for each one is the monument of months or years of patient labor, and lays bare a little corner of the globe's history unseen before. These plain books all are laid on their sides to prevent their warping. Among them are portfolios full of original drawings and manuscript notes that have grown out of the studies of the master and his students, which are left for years to season under the watchful experience which shall confirm or condemn their presumed truth before the test of publication is risked.

The rest of the glass shelving on the south wall is covered with glass dishes of all kinds. Room is precious, so the cupboards have doors of slate which, when shut, form a black-board (every working and teaching naturalist must of necessity be a pretty good draughtsman, both with pencil and chalk); and there are everywhere hooks and other devices for convenience.

The eastern and western ends of the room have windows so guarded by shutters as to exclude the light, but admit a cool breeze; but the north wall is full of long windows, having only space between for five tables, which (though there are two extra ones in the corners) limit the number of persons who can

work at one time. This north light is excellent, the bay reflecting it, while the grassy plat near by prevents any glare. Across each window may be placed a movable shelf, fixed at any height, on which a glass jar may be set between the observer and the light in such a way that the motions of any little creatures in this improvised aquarium can be seen with great plainness.

It would seem as though so well constructed a building as this, founded upon the granite core of the primitive globe, was solid enough; but microscopists—and the men who work here are nearly all microscopists—will tell you that their instruments are sensitive to a jar which the most acute of our nerves would fail to perceive, and that the least tremble is sufficient to disturb that precise focus upon the keeping of which the success of an observation depends. Independent of his foundations, therefore, Mr. Agassiz has built a line of massive arches, nowhere touched by the floors or walls of the building. It is upon these arches that the working tables and the little three-cornered microscope-stools stand, feeling the shock of no gale that may beat against the house, nor the tremor of any foot-fall upon the floor.

The tables are not of large size,—about like a library desk,—but are firmly constructed and serviceable. They are covered with English glazed tiles,—white, except two black rows at the end, furnishing opposite backgrounds to the glass vessel in which the often almost invisible morsel of animal life is floating. What cannot readily be seen against a white surface may become plainly apparent in front of a black one. On the long middle tables (hereafter described) Mr. Agassiz has enlarged upon this idea by covering them with spaces of variously colored tiles simulating natural sea-bottoms. The clear gray does well enough for sand; dark leaden gray for mud; a mottled castile-soap pattern in brown for pebbles; and dulse-green for sea-weed. It is a popular error, or, at any rate, prevalent thoughtlessness, that sea animals pay no attention to the sort of bottom underneath them as they move about. If this is true of any, it certainly is not of a large number of kinds. Some are confined to districts limited by one sort of bottom because it provides their only food; others because there they are safer from harm than they would be elsewhere; a third class perhaps from choice, or for some reason not readily discernible. In any case, it has been both suspected and proved that the character of the bottom has great influence, particularly in the matter of color, upon the fishes and others frequenting a district of mud or sand

or rocky or weed-grown bottom respectively. It was in order to experiment in this direction that Mr. Agassiz invented and provided these imitative surfaces, which should form an artificial bottom resembling sand, pebbles, etc., when the dish containing a fish or invertebrate to be deceived should be set upon it.

I can mention here only one of the interesting results of the experiments. The flounder, as everybody knows, is an ill-looking, dark-colored, flat fish, which creeps close along the bottom, and frequents for the most part banks of mud, from which it is almost indistinguishable. Occasionally the flounder occurs in sandy districts, in which case it is of a yellowish tinge, though not otherwise different from its black neighbor of the mud. Taking young flounders, Mr. Agassiz experimented upon their power of changing color. Placing them upon the blackish tiles, they quickly turned mud-color; moved thence to the "sand" tiles, only a few moments elapsed before their leaden skins had paled to dull yellowish white; transferred to the mimic "sea-weed," in less than five minutes a greenish hue overspread their skins, which would have served well in their native element to keep them unobserved against a mass of algæ. As the flounders grew older, the rapidity and facility with which these changes were effected lessened, and perhaps they would altogether cease in aged individuals who had never practiced as turn-coats; but the readiness with which the youngsters altered their complexions to suit their circumstances, as shown by experiments in this laboratory, would give them high rank in partisan politics.

Between the ends of the two tables which, as I have said, extend lengthwise of the room as far as convenience will allow, stands a sink made of soap-stone, where overflows go and where water may be drawn by the pailful. This sink is covered like an old-fashioned well, with a flat canopy of glass resting at a convenient height upon four corner posts, so that jars may be set upon it and their contents examined from underneath with the important help of transmitted light.

The central tables each side of this are intended not for study,—that is to be done at the small desks near the windows,—but for the preservation of specimens; and to this end there is suspended over them an elaborate system of pipes, supplying air and water and bearing faucets every few inches. This system consists of eight sub-pipes connecting with two branches from the cistern siphon, which hangs well above the operator's head, but within easy reach of the hand. Each sub-pipe may be closed or opened by a stop-cock so as to

admit either air or sea-water at will,—the air being brought to them by a special connection with the air-main from the windmill. Besides this, a portion of the branches can be cut off and used to supply rain-water also, which is stored in a small cistern of its own near by. Sea-water, fresh water, and air may therefore be supplied all at once and continuously, and the arrangement for each may be changed and interchanged to suit the student's convenience, while no anxiety is felt, either lest the supply may cease or lest any irregularities may occur, since automatic contrivances guard against accident to the machinery. Even if water should fly loose, or overflow somewhat, no harm would be done, for copper gutters carry away all drippings, and the cement floor, covered only with neat oil-cloth, defies injury from wetting. In case of a failure of the windmill, the cistern could be filled daily by a hand force-pump.

I have explained that this particular locality is highly favorable to the study of marine zoölogy, because the jutting headlands on each side of the harbor make a funnel into which, twice a day, the entrapped tide drives the pure ocean waters fresh from the warm path of the Gulf Stream, bringing a harvest of living things that elsewhere along the coast remain far outside. Mr. Agassiz is therefore able to get, at the very door of his laboratory, a large series of thoroughly pelagic animals which other naturalists (at least, everywhere north of Hatteras) must go far afloat for, and would regard as wholly extra littoral.

One may see anchored in the little cove behind Castle Hill a small steam-launch (it can outspeed anything of its size at Newport!), a trim sloop or two, and various dories and punts; these constitute the fleet with which materials for investigation are gathered. Two methods are practiced, according to the sort of animals desired or hoped for. If mollusks, sea-urchins, star-fishes, annelids, or mature non-swimming animals generally, or some kinds of bottom-feeding fishes, are wanted, then the launch is sent out to trawl.

The trawl used by Mr. Agassiz is a miniature of the improved apparatus designed by him and employed in his deep-sea dredging in the West Indies on board the Coast Survey steamer *Blake*. It consists of a pair of *Us* set on edge and fastened in that position by horizontal connecting bars of iron. Behind this frame so constructed is fastened a sack of chain-netting or canvas, or both, and in front a sort of bail-handle to which the drag-rope is attached. It is of no consequence upon which side the trawl falls when thrown overboard, since the round ends of the "*Us*" give equal runners on both sides; and, as it is pulled along,

the weight, position, and blade-like form of the lower bar cause the machine to hold to the bottom, and scrape every easily movable thing into the strong bag which trails, open-mouthed, behind. The "feel" of the rope tells the dredger when it is full; it is then hauled up hand over hand or by means of a windlass, and its contents are emptied out and sorted before the next load arrives. Dredging in Newport harbor, or, as we used to do it, back and forth through Vineyard Sound (to the great perturbation of weak stomachs), is a very simple matter; but when it comes to dropping the great deep-sea dredge two miles or more, and taking all day to the experiment, with the help of a donkey-engine, it becomes an art. In the two cases the apparatus differs little, except as to size and strength.

The laboratory I am describing, however, mainly is connected, thus far, with inquiries into the embryology and youthful life of fishes, and the embryology of radiates, crustacea, and worms. Materials for this, in the shape of eggs and larvæ, are almost wholly to be got just under the surface of the sea, where the wandering, playful children of all sorts of sea life—fishes, mollusks univalve and bivalve, crabs and shrimps, jelly-fishes, sea-stars, urchins, worms, etc.—swarm and drift in happy aimlessness until their ranks are thinned by countless enemies, and the survivors sink to safer depths or settle on some public and preëmpted homestead among the surf-showered rocks. When the glare of the sun has left the water, and the tide stands high off the torpedo station or is just beginning to settle seaward at Beaver Tail, the professor and his students slowly cruise in search of such tiny prey. Behind them is towed a gauze net, which skims the surface and ingulfs every unlucky midget in its path, while all hands continually dip up at random gauze dipperfuls of water and carefully rinse their nets in the small tubs, on the chance of getting something worth having. It is by this sort of pleasant sea-prospecting that we have learned how rich are the tidal currents setting into Narragansett Bay in representatives of all the crowding pelagic life of the Gulf Stream; and if Mr. Agassiz neglects to drag his nets on the incoming tide, it is a small matter, for the outgoing rush leaves a thousand sea-born youngsters captives in the pocket-like cove just under his windows, where they have been entrapped and may be scooped up at leisure.

Returning from such an excursion, the buckets and tubs containing the net result are brought to the laboratory and sorted out. The visitor then would find the long central tables covered with glassware—jars and pans and bowls, white and clear as crystal, capa-

acious as if to hold punch for the Chaplain of the Fleet, every one with a mouth as big as its body, or even bigger. Some of these high, straight-sided, flashing jars will hold several gallons; some of the shallow ones are like six-quart milk-pans, and the sizes of the others lessen to the minimum of a watch crystal, where a single egg, or *gastræa larva*, or dancing animalcule may be isolated from his fellows. This glassware is all made to order for the laboratory and for the Cambridge Museum. It is altogether unequaled for the purpose, since it is capacious, clean, transparent, and not affected by sea-water as metal or wood would be, while it is cheaper, lighter, and more handsome than porcelain.

Having roughly sorted and cared for the dredgings that same night, the next morning the student examines them more carefully, and arranges for preservation the specimens which he especially desires to keep alive. The method will depend upon the age, character, and known hardihood of the object, but the two requisites in all cases are cleanness of water and constant aëration. Turning off the water from one of the pipes, a rubber tube from the air-main is led to it, and it becomes an air-pipe. The jar containing the living specimen is placed on that part of the table at which, by means of the tiles underneath, it can be seen to the best advantage; a small rubber tube attached to a faucet on one pipe is made to supply to it a steady stream of clean sea-water, and another tube brings fresh air to replace the oxygen exhausted by the animal's respiration; the overflow takes care of itself, and there is no further trouble.

But this simple proceeding can be trusted only in the case of large, mature, tough animals, such as rarely have the honor of reposing in these scientific precincts. More gentle treatment is usually required, and the methods now successful have only been learned through long and costly experience.

In the first place, isolation, entire or in part, is necessary. This is accomplished by subdividing the tubes which lead from the iron pipes overhead. An inch or two from the faucet there will be slipped in an inverted T of glass bearing two tubes; these in turn may be similarly subdivided by inverted Ts, and so on, the number of outlets supplied by the one original faucet and neck being limited only by convenience. Every terminus of a tube, whether delivering water or air, is closed by a glass tip, which not only gives exit to a safely diminished stream, but does no harm to the inhabitants of the jar, as the corrupting influence of rubber in contact with salt water might. These tips are bits of glass tubing cut off as required,

melted in a spirit-lamp, drawn to a fine point, and perforated by a hole, which allows the escape of only a thread of water or a bubble of air so small as to cause no disturbance. Each man makes these glass tips for himself, bending and twisting them to suit his needs. The rubber tubing, too, is a great convenience. It is of various sizes, can be cut into any required length, pieced out by stretching over a joint of glass tubing, fitted air-tight upon iron pipes, faucets, glass rods, and the like, and bent about in the most handy and time-saving way.

Though the water comes clear enough, it will not do to allow the air supplied by the windmill to enter at once the water in which the very delicate organisms are being kept alive. It is likely to contain some moisture gathered on the way, and this moisture is liable to have been charged with iron-rust or some other mineral ingredient. The air from the pipe, therefore, is led first through a large Woulfe bottle, such as chemists are familiar with, where it leaves its deleterious moisture and goes clean to its work. That this precaution is a judicious one, is shown by the fact that the Woulfe bottles gradually become clouded within by a deposit of iron and dirt. Sometimes ducts of rubber connect two or three jars to one or more of these Woulfe bottles and to each other, and so there is a constant circulation among a community of little aquaria, economizing apparatus. All these contrivances together, and two hundred and fifty jars and bowls, can be taken care of at once on these tables, though there are only a score or so of supplying faucets.

Reckoned by their vitality in captivity, marine animals fall into three categories:

*First.* Those that are large and strong enough to allow water to be introduced in a steady stream directly to their jars, and that do not require any more air than the constant current of water brings; these are the crabs, shell-fish, annelids, and common full-grown shore animals, such as are ordinarily seen in aquaria.

*Second.* Those that will survive simple aëration of the water in which they are placed, the water itself not being changed, usually, but only added to to make up for evaporation. To this class belong crabs and other small animals that are just about to lay their eggs, together with young of all sorts in their swimming or larval stages. In these cases, however, the "injector" is often made use of. This consists of a spindle-shaped chamber of brass, with external openings, so that, as the stream of water passes through, it sucks into its current a quantity of air which goes to the jar mingled with the stream. This little in-

jector is, in fact, a miniature Catalan blow-pipe, being constructed on exactly the same principle as that which supplies the tweers of a blast-furnace. It is a contrivance of great value in the laboratory.

*Third.* The morsels of almost invisible life too delicate to resist ever so feeble a current, and too volatile and minute not to escape in an overflow, however well guarded. To the receptacle of these only a very gentle though unremitting supply of air can be given, while the water must frequently be changed by cautious dipping out and pouring in by hand, a trifle at a time. No mother attends to her infant with more tender and scrupulous care than the zoölogist to these babies of the sea.

And what are they? Eggs of fishes, mollusks, crustaceans, and radiates; embryos of similar animals and of jelly-fishes—filmy, fragile, nineteen-twentieths water—which would perish under the slightest injury, and can only be kept alive by the greatest painstaking. That Mr. Agassiz has been successful beyond all precedent in preserving these excessively delicate pelagic forms in his laboratory, shows how admirable are all his methods and appliances to reproduce the most healthy conditions of nature. It was no mean triumph, for instance, to have reared those young flounders and goose-fish from eggs scooped up in the open sea, and to have kept them all summer, while he noted and sketched the various aspects of their growth. But the highest surety of the suitability of his arrangements was afforded when the vapory, translucent siphonophores, in which no one before had been able to maintain vitality for more than two or three hours, lived contentedly in their glass prison last summer during fifteen days. One highly favorable circumstance, no doubt, is that the temperature of the water in the Newport laboratory is cooler than that of the open sea. Heated by the ever-present Gulf Stream, the ocean in summer rises to a warmth of seventy-six or seventy-seven degrees Fahrenheit; by the time it has passed through the pipes and the shaded cistern, this water has been considerably cooled down, and remains at a lower temperature than that of the native element from which the subjects for study are brought. This is greatly to their advantage (the hatching of fish eggs may be checked, yet without loss of vitality, and held back indefinitely, by steady cold), and it was because of the opposite condition that sea-side students at Nahant and Salem and Gloucester have always been less successful. English laboratories have an equal difficulty, overcome only by the expensive use of ice.

But to go into all the details of laboratory

expedients employed here is beyond space, and perhaps would interest very few. Everything is intended for work and study, not for show; there is nothing in the way of an "aquarium." If it happens that the apparatus or the zoölogical specimens are pleasing, that is a happy chance, not the first intention. No living object is kept longer than there is use for it; mere curiosity must make way for original investigation into something else more obscure.

The studies at the laboratory have continued through half a dozen summers, and have been conducted by Mr. Agassiz, the late Count L. F. de Pourtalès, Professor Walter Faxon, Dr. W. K. Brooks, and Mr. T. W. Fewkes, with a few others at intervals.

Mr. Agassiz's work here has been mainly on the embryology of fishes, radiates, crustacea, annelids, and pelagic tunicates. Several contributions to the National Academy of Science and to the Proceedings of the American Academy of Arts and Sciences (Boston) have grown out of them, chiefly upon the young stages of flounders, goose-fish, and various other genera; and embryological observations on the ctenophoric jelly-fishes, on the gar-pike (*Lepidosteus*), and on *Balanoglossus*. Mr. Agassiz was also employed for a long time in working up the sea-urchins brought home by the *Challenger* deep-sea expedition, the results of which have been embodied in the special scientific reports of that famous cruise.

Count Pourtalès spent his energies chiefly on his favorite corals, *Foraminifera* and their kin, publishing his results in the memoirs of the Museum of Comparative Zoölogy, of which he was the keeper. Mr. Faxon, who is assistant professor of zoölogy at Harvard, made a specialty of crustacea, and wrote several papers on their embryology from here.

Dr. Brooks, who is now assistant professor of biology at Johns Hopkins University, and who carries on a marine laboratory of his own at Beaufort, North Carolina, busied himself with the embryology of mollusks, publishing one paper. Dr. Fewkes, now Mr. Agassiz's assistant in the Zoölogical Museum at Cambridge, did the same thing with jelly-fishes. Much of the work of these and other students (among them some ladies) remains unpublished in note-books and manuscript (for "rushing into print" is frowned upon by this cautious coterie), so that future results may be expected, the chief preparation for which has already been done. As to the further progress of the laboratory, Mr. Agassiz says the chief field will naturally be the study of the youth of marine animals,—not simply of their embryology, but of the successive phases presented in the development of their infant growth, and the relations these bear to adult forms and to general questions of biology and classification.

*Ernest Ingersoll.*

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## WONDERLAND.

My heart to-day is like a summer flower  
Which lifts its blooming chalice to absorb  
Sweet odors from the air. For, like a flower,  
My heart absorbs the fiery life that dwells  
Within the blossoming matter of the world  
And naked strength of nature. Here, where earth  
Seems peaceful as a dreamer's paradise,  
I trace the movement of the universe,  
The splendor that inspires the thought of man,  
And glory that outshines the fancy. Here  
I learn the clear and simple speech of truth,  
And feel the buoyant spirit of forest birds  
That fill a whole bright summer with their song.  
I look upon the old world as a child  
Looks with a vague and tender trust upon  
Its mother's face; and, strangely moved, I see  
Beyond the beauty of familiar things,  
As one may see into another's heart  
With the fine sense of love.