solubility, or from other causes, have entirely disappeared, without leaving behind them very manifest traces of their former presence. But, yet again, if we assume this origin for the copper, we must necessarily assume also that the cupreous solution came from above: that it is to say, from an *overlying*, not from an *underlying* source: as otherwise, from the filling up of the fissures, the supply would quickly have been cut off. This involves manifold difficulties of an easily imagined character.

My object, in the present note, is not to propose theories in explanation of the origin of these copper deposits, but simply to shew that if one of the hypotheses already advanced with this view—that which attributes the larger copper masses (in intimate association with the trap) to direct igneous action, and the smaller, arborescent and more distant masses to gaseous emanations as previously explained—be not free from difficulty; the other, or so-called electro-chemical theory, is, in the cases referred to, absolutely untenable; and, amongst other reasons, chiefly for this namely: that the deposition of the copper on non-conducting bodies is opposed to all known principles. It is to be hoped, therefore, that those who still feel inclined to adopt and maintain this theory of convenience, will not forget to enlighten us as to the cause of the peculiar departure from known laws exemplified in the cases under review."

A second paper by Professor Chapman, related to the use of the Saltness of the Sea. This is a subject of which too narrow views should not be taken, since it is easy to perceive many important uses secured by the substances held in solution in the ocean. Professor Chapman brought forward an interesting experiment, illustrative of the equal diffusion of this saline matter, under circumstances unfavorable to transference of the water itself; and leading to the conclusion that one important consequence of the saltness of the sea is the regulation of the rate of evaporation from its surface.

"It is a current opinion that, in consequence of the surface of the sea becoming salter and hence heavier by evaporation, a downward motion of the surface water necessarily takes place; and hence Lieutenant Maury's hypothesis that the sea is salt in order to produce circulation. Some time ago I suggested another object in explanation of the saltness of the sea, viz.: that the sea is salt in order to regulate evaporation. The greater the amount of salt, the slower the evaporation of the water,—and the reverse: so that, if by any easily conceivable cause, or combination of circumstances, the normal degree of saltness becomes either increased or diminished—a kind of self-regulating force is set up to resist the continuation of the abnormal action, until time restore the balance. Even leaving out of consideration the equalizing effects produced by the accession of fresh water to the surface of the sea by rain and rivers, it seemed to me that the principle of diffusion was in itself sufficient to prevent the sinking of the water thus affected by evaporation; or, at least, to prevent the sinking of this water to any extent. But how to prove the point. The fact that the saltness of the open sea was substantially the same at considerable depths and at the surface, says nothing; as it would necessarily follow, that for every heavy particle of water that sunk, a lighter particle would rise up to supply its place; and hence the composition of the water would be kept uniform; without the principle of diffusion being in any way required to explain the phenomenon. After some consideration I adopted the following method, as one sufficiently trustworthy to afford an answer to the question under review:—I procured a leaden pipe one inch in diameter, and bent into the form of the letter U: each upright being about thirty-nine inches in height, and the connecting piece at the bottom rather more than twelve inches long. This I filled up to about an inch on each side with a solution of common salt in rain water (the salt being present to the amount of 3.786 per cent.,) and then I carefully closed one end, leaving the other end open, but protected from dust by a cone of silver-paper fixed on a bent wire, and so arranged as not to prevent evaporation. The per centage of salt (3.786) was carefully ascertained, and the apparatus left in an unoccupied room, the window and door of which were kept almost constantly open, in order to promote the evaporation of the solution as much as possible. After the lapse of about three months, (April 18 to July 14,) portions were taken from each end of the tube, and from the connecting piece below, (a small orifice being made in this;) and the amount of salt in each portion was accurately determined. Now if the principle of diffusion had not been brought into play, it is evident that the solution in the open limb of the tube ought to have been stronger than that in the closed limb, although, by the circulating process, the amount of salt at the top and bottom of the former might have been alike; and, again, it will be equally evident that if the principle of diffusion were brought into play, the supposed sinking of the surface solution, as the result of evaporation, must be altogether imaginary. Six separate determinations, two from each of the three portions of the tube, shewed a per centage of salt essentially the same. The following table exhibits the results obtained:

		Solution.	Am. of salt.	Per cent'ge of salt.
1	A. From the top of the open limb, ..	302.261..	11.59...	3.833..
	B. From the bottom of the same,. ..	300.24...	11.51...	3.835..
	C. From the top of the closed limb,.	288.60...	11.055..	2.831..
2	A. From the top of the open limb, ..	264.84...	10.16...	3.837..
	B. From the bottom of the same,...	290.10...	11.12...	3.833..
3	C. From the top of the closed limb,.	306.66...	11.75...	3.832..

(To be continued in our next.)

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

We believe the following from *Putnam and Emerson's Magazine* is rather severe; but we publish it for the especial benefit of those who are continually disparaging our system of public instruction in Canada and extolling that of our neighbours. They will see that he who is determined so to do may pick holes in the best systems.

"We have had eulogies in plenty on our school system, its officiators, and all its appurtenances. We have been told of the grand destiny of our great Republic; and of the admirably made-up citizens, *in posse*, that stood waiting to step into its high places and its fat offices. We have been pointed to the triumphs of art and intelligence; and the last cadenza in the pean always fell gracefully on the brow of the genius of our common schools. To be sure, we have left off the nomadic life of our ancestors, and no longer, as a rule, drive our women, like them, to the field. To be sure, we are not Tartars nor Timboos; but is there not something more? Do none of our young men and maidens go out from the very rose-blush of existence into the still grave? Do so few of the living foolishly prefer vice to virtue, dishonesty to staunch integrity, the bankruptcy of their own purity and power to an unsullied name and a noble success, that it is no longer worth our while to seek after higher steps in the problem of youthful training and development? If we have been dreaming, let us awake and look at a few realities.

"We need not name again the unfortunate teacher in this city whose rash good intentions opened the way for a series of developments that might well startle our eulogists from their propriety. *That name* is no longer a *proper*, but a *common noun*—the title of a class, it seems, but too largely represented among us. In a fortunate hour—fortunate in the end for our school system, we mean—a blundering letter to the New-York Tribune, and a savage editorial retort, tore aside the veil, and scores of snug incompetents stood, as they did not count on being, exposed. The country was aroused; and, for a part, at least, it has answered the question. Who are our educators?

"We have suddenly learned, what we ought to have known before, if we had but remembered how among us nepotism lords it over fitness, and how the quality of all our purchases is regulated by the price we are willing to pay—that scores of our teachers, in schools, low, high, and *highest*, are ignorant of the commonest degree of accurate acquaintance with their mother tongue, are unskilled and boorish, and in the most charitable view, wholly incompetent and grossly unfit to stand in the places into which they have smuggled themselves. Nay, we learn of some who enter their schools drunken and offensive. School officers in this city are found to carry this peculiar class of qualifications a point further. They repay the distinguished generosity of the artists, Thalberg and D'Angri, with a presentation ceremony interladen with hiccoughs, bombast and stupid leers. The picture is humiliating. But the committee of teachers crown the scene by substituting for a chaste and heartfelt expression of thanks, a sophomoric display of vapid rhetoric and spoiled theology.

"It even comes out that the commonest elements of genteel culture are in decay among us. There are fewer gentlemen, business men, correspondents of all kinds, who write well-spelled, fairly-constructed, and properly-punctuated epistles, than formerly. Collegiate professors indite awkward botches, un-"*courtuous*"-ly styling themselves "professors," and bewailing their "*salery*." Government officials everywhere among us suffer under these inconveniences; but many of these think their syntactical trespasses venial—*they* have been so absorbed in active pursuits (*of Government pap!*), that they have had no time since they arrived at manhood for self-cultivation; thus tacitly admitting that the boy's schooling is not expected to accomplish what it pretends to. AND IT DOES NOT; the proofs throng on us on every hand. Even well-meaning men actually came forward lately and palliated the blunders in spelling and grammatical construction of *the first teacher in one of the highest institutions of the greatest city in our country!* They said his letter was written "in haste;" it was "respectful," even if misspelled: and a revision" would probably have called the writer's attention to its errors! We take the position, simply, that no man who *needs to revise* the orthography or obvious syntactical relations even of what he writes in haste and under