

under the direction of Rev. Mr. Bayard, deserved particular notice as it had already become justly popular, and would unquestionably render important services to the inhabitants of the North shore of the district, whose number was set down as 50,000.

Among the academies, that of the Brothers of the Christian Schools, at Yamachiche, was entitled to the first place; and the model schools of Mr. Tétrault, Rivière-du-Loup; of Mr. St. Cyr, Ste. Anne-de-la-Pérade; of Mr. Robert-on, Ste. Geneviève; of Mr. Lamy, St. Sévère; of Miss Hamel, Champlain; and of Miss Robitaille, Pointe-du-Lac, were next in the order of excellence. Several of the elementary schools were also kept on an admirable footing.

(To be continued.)

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

—The high solicitude of the Emperor of the French, strengthened by the concurrent wishes of the legislative bodies of the state, has not failed, says the *Moniteur*, to influence favorably, during 1862, the management of public instruction and religious affairs. This management, affecting so many interests, is accordingly found maintaining its progressive tendency; and if the desired results have not been attained, it is only because its action has been curbed by the insufficiency of the resources at its command. The hope, however, is fully entertained that the contemplated improvements will be effected in future years, when the strict economy lately introduced in the financial administration, shall have provided the means of relieving the intellectual, religious and moral wants of the country. In connection with superior education the very useful work commenced at the *Muséum d'Histoire Naturelle* may be noticed. This museum is indebted to the munificence of the Emperor for the acquisition of a large number of animals of great value to science, which are in part the gift of the King of Siam. The *Bureau des Longitudes*, reorganized by the decree of the 26th March, 1862, has been able to improve the work published every year under its auspices. *L'Ecole française d'Athènes*, of whose young professors many already possess rich and brilliant classical attainments, continues its researches in Greece. Its labors have not been interrupted by the civil dissensions in that country, and many curious documents will doubtless be brought to light. The number of books distributed during the year in France by the *Départ des Livres*, is 53,211. The augmentation in the number of degrees conferred by the Faculties and Institutions devoted to superior education, noticed as early as 1800, still continues, and, in 1862, there were conferred a number of diplomas exceeding that of the year preceding by 295. With regard to the Normal schools it may be remarked that the number of pupils in attendance was continually increasing and the salaries of the *maîtres de conférence* were higher than before. There were 50 Imperial lycées in France at present, besides that of Algiers; and upwards of a million of francs had been expended, in 1862, in repairing and building edifices for these institutions. The communal colleges have necessarily suffered in consequence of the competition in liberal instruction, and their number is decreasing. It is thought that these numerous establishments can only be placed in a satisfactory condition by lowering the course of study. A marked advance in elementary education has taken place during the year. The number of communal schools is now 37,000; and the attendance is very regular. The law does not recognize the principle of gratuitous nor compulsory instruction, but exacts an equitable tax as compensation from those who are competent to pay it, and admits gratuitously to the schools the children of indigent parents and even of those who could not pay the tax without great inconvenience. These regulations have not had the effect of reducing the number of paying pupils, which, in three years, has been augmented by more than 200,000; while the school tax has risen from nine millions in 1858, to thirteen millions in 1862. This prosperity induced the Emperor to issue the decree of the 19th April last, which entitles all teachers in common schools who have served during five years to receive as supplementary remuneration, from 1863, an amount so calculated that their minimum salaries shall be not less than 700 francs. Besides which one twentieth of the whole number of teachers shall receive salaries of 800 francs after ten years of service, and of 900 francs after fifteen years. It is also provided that all pupil-teachers and hussars shall receive a bounty of 100 francs on accepting employment in a public school.

The Government had extended aid to 662 communes for the building and repairing of schoolhouses. The amount given in this way averaged 5326 francs to each commune. A considerable sum had also been placed at the disposal of the Department for the improvement of the primary normal schools. School libraries, which must not be confounded with communal libraries, were growing into importance and promised to become very useful. The sum of 100,000 francs had been appropriated in 1862, for the purchase of books; and more than 60,000

volumes had been acquired. It is very satisfactory to know that there are in France 1000 communes in possession of good libraries.

SCIENTIFIC INTELLIGENCE.

—Hymenoptera emit peculiar odours; the little wood-boring *Hylei* send forth a very sharp but agreeable citron smell, some of the *Itheti* a lusciously sweet but sickly smell, some of the Ichneumons offensive smells of garlic, or still more disagreeable scents; but the capacity is not always co-extensive with the size of the insect, for the smallest sometimes emit it more powerfully than larger ones; nor is it a peculiarity limited to this order, for many of the beetles, and bugs, and caterpillars of the Lepidoptera possess the same property. Thus the *Cicindela campestris* exhales a strong smell of the otto of roses, as does also the musk beetle (*Cerambyx moschatus*), and both exude at the same time a milky fluid which adheres to the fingers; the *Necrophori*, or burying beetles, exhibit a strong smell of musk, some of the *Staphylinidæ* an agreeably sweet smell, for instance, *Philonthus*; in others it is most disagreeable and offensive, and amongst the larvæ of the Lepidoptera there are many which give out peculiar odours, for instance, that of the Goat Moth, which feeds within the substance of the ash, is named from the circumstance of its offensive smell, which has all the rankness of the smell of the goat, and may be detected at a distance from the tree wherein it is feeding. I have also found a whole copse of willows emitting the strong and refreshing fragrance of a garden of roses, it being abundantly inhabited by the *Cerambyx moschatus*.

—The assertion so frequently made, and so generally accepted, that our sun is one of the fixed stars, is of course incapable of demonstration. Its probability seems to rest chiefly upon two arguments—that the light of the stars is evidently of the same intrinsic and self-developed character with that of the sun, and that the sun, if viewed at a distance equal to that of the stars, would undoubtedly appear no otherwise than as one of them; and since no more direct proof can be obtained, we are willing to receive these as sufficient. But this point once admitted, it is evidently consistent with all analogy to proceed a step further, and to suppose that these other suns, or at least the insulated ones, may be, as our own, the centres of light and heat and gravity, and electrical and chemical influences, to groups of surrounding worlds. The idea is a magnificent one, and in full accordance with every other declaration of the glory of God in the heavens, and it would be no matter of surprise at any time if observation were to give us direct evidence of its truth. Nor would it necessarily follow that the highest class of instruments would be required for the detection of these planetary systems, though so wonderfully remote in the depths of space. Analogy may point the way in many cases where it ought not to interpose a check, and the diminutive size of our planets in comparison with their ruler affords no adequate inference that in other systems a very different arrangement may not obtain. It was a noble expression of old Bianchini's, "Quis unquam exhaustas dixerit cæli copias!" and all the subsequent progress of astronomy has proved, from more comprehensive premises, the justice of his conclusion.

And thus, although planets no larger than our own might ever remain invisible at the distance of the fixed stars, it is not merely possible, but may be even probable, that bodies of a similar nature may be connected with other suns, of sufficient magnitude to be visible with our instruments, especially in their modern state of improvement. The idea was thrown out by Sir J. Herschel, many years ago, that certain very minute points, closely associated with larger stars, may be visible by reflected or planetary light; and he specified among others, γ Urae Majoris, γ Hydre, α Geminorum, and the comites of α^2 Cancri and α^2 Capricorni; but it does not appear that these suspicions have been verified, or that the matter has been subsequently investigated, notwithstanding its obvious interest and importance.

The subject, however, has been brought afresh before us by M. Goldschmidt's recent assertion that, with an object-glass of little more than four inches aperture, he has not merely perceived Alvan Clark's companion of Sirius, which has hitherto been supposed to be reserved for the largest and most perfect instruments, but has detected five additional companions of the same character, at somewhat greater distances, varying from 15" to 1'; and, in announcing this discovery, he suggests an inquiry as to whether the object discovered by A. Clark may shine by native or reflected light, which may of course be extended to the rest. It seems remarkable that the colossal telescopes of Clark, Bond, Lassell, and Chacornac, in which the nearest of these alleged attendants has been perceived, should have given no indication, as far as has hitherto been stated, of the other five; but no doubt immediate attention will be paid to so interesting a point. M. Goldschmidt has distinguished himself as the discoverer, with comparatively very inadequate instrumental means, of no less than fourteen of the small planets intervening between Mars and Jupiter, and has, on that account, received one of the most honourable of testimonials, the Gold Medal of the Royal Astronomical Society, so that not a shadow of suspicion can be attached either to his eye or his judgment; but it is perhaps possible that some source of deception may exist in his instrument, such as appears to have given rise to the supposed satellite of Venus in the last century. We shall soon, at any rate, know more about it. Should the existence of these minute points be established, the most natural supposition, of course, will be, that Sirius is accidentally projected on a background of small stars at