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THE

CANADIAN JOURNAL

OF

INDUSTRY, SCIENCE, AND ART:

CONDUCTED YB

THE EDITING COMMITMEE OF THE CANADIAN INSTITUTE.

NEW SERIES.

VOL. X.

TORONTO:
PRINTED FOR THE CANADIAN INSTITUTE,
BY LOVELL & GIBSON, YONGE STREET.
MDCCCLXV.

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THE CANADIAN JOURNAL.

NEW SERIES.

No. LV.—JANUARY, 1865.

THE CENSUS OF 1861.

BY JOHN LANGTON, M.A.,

PRESIDENT OF THE LITERARY AND HISTORICAL SOCIETY OF QUEBEC.

From the Journal of the Lit. and Hist. Soc. of Quebec.

Upon the appearance of the first volume of the Census of Canada, I undertook an examination of it, with a view of ascertaining whether I could extract from it any useful results with respect to the vital statistics of this country; and especially with relation to the natural increase of the two sections of the Province. Before commencing the work, I had reason to entertain serious doubts as to the trustworthiness of the figures with which I had to deal, and at each successive step of the investigation, I only became the more convinced, that some of the figures given were manifestly wrong, and that much caution must be exercised in assuming the truth of anything that was to be found there. This was not a very satisfactory basis upon which to found any conclusions, and, in point of fact, I found that a large amount of rather laborious calculations had been entirely thrown away, from the evident worthlessness of the foundation on which they had been based. I persevered, however, because it is only from a minute analysis that any judgment can be formed of the extent to which some portions of the work may be relied upon; and I am induced to offer this paper to the Society, partly with the object of

shewing what results may be considered as at least approximately correct, and partly to warn others from wasting as much time as I have done on those parts which can do nothing but mislead.

It may be desirable, as a preliminary, to explain the nature of the work performed by the enumerators. In their lists the name of each individual in a family is given, with columns to shew whether male or female, married or single, and with a column for the age next birth day. There are also columns to shew the number of births and deaths during the preceding year, and the age at which death occurred; and this is all that relates to vital statistics, or to that portion of the subject which we are examining. Now, it would appear probable *a priori*, that with ordinary care, the facts then and there present, viz.: everything relating to the persons living at the time, would be given correctly enough. I do not think that there is any reason to doubt the numbers living, the proportion of males and females, and of married and single, very nearly representing the true state of the population; and the ages would, probably, be not very far wrong, though there is much more doubt upon this subject. Many persons do not know their ages with accuracy, and many may have purposely misstated them. The tendency to guess at the age, and to call it the nearest round number, is forcibly illustrated in the Census of the State of New York, for 1855, by a diagram which shews the immense preponderance of ages stated as 35, 40, 45, &c., over all other ages. But when past facts are recorded, as the births and deaths which occurred perhaps many months before, we could hardly look for the same accuracy, and one would expect the births and deaths to be considerably understated. An error of this kind is not by any means peculiar to the Census of Canada. By the Census of the State of New York, for 1855, the total deaths recorded are 46,297, which gives a percentage on the population of 1.36, a suspiciously low rate; but in the same year, whilst the Census gave the deaths in the City of New York at 11,022, the city registers recorded 23,042. If we merely correct the manifest error in the city, the general rate would become 1.74, but if we suppose the omissions there to be a test of what they were in other parts of the State, it would be as high as 2.84; the true amount is probably intermediate between the two. A very striking illustration of the omissions which are likely to be made of facts, which occurred some time before the taking of the Census, is furnished by the United States Census of

1860. The deaths are there classified according to the months in which they fell, and whilst it is notorious from the U. S. army returns, and from the records of Massachusetts, Rhode Island, and other places where regular registers are kept, that August and September are the most fatal months, and that May gives rise to fewer deaths than any other month except June, in the Census returns, by far the largest number is recorded to have occurred in May. The reason is obvious—the Census is taken on May 31st, and the recent deaths are given probably not very inaccurately, whilst a large number of the earlier ones are forgotten. Upon this subject the superintendent of the Census remarks, in rather more poetical language than one is accustomed to find in a statistical return, that "even as the eye perceives the nearer objects in a landscape more fully and distinctly than the remote, so the recollection of past events has a similar recession, which is subject to laws." He proposes a correction from the army returns, viz.: to assume the first quarter as correct, and to add 6 per cent. for the second quarter, 46 for the third, and 58 for the fourth, which must be acknowledged to be rather a singular *law* of lapse of memory. This correction would bring the United States deaths up from 1.27, as given in the Census, to 1.56; but, without putting too much faith in any law of mnemonic perspective, it would appear more natural to assume the number given in May as correct, and to increase the whole number, in the proportion which the deaths in May by the registers bear to the whole. As thus rectified the deaths would be 1.79 per cent. But it would appear that even this is not enough, for the superintendent refers with approbation to an elaborate calculation by Mr. Meech, the exact nature of which is not stated, by which he estimates the deaths during the last fifty years to have averaged 2.2 on the population. From these facts it is evident, that with every care by the enumerators, no reliance can be placed upon the returns of deaths as given for a whole year, and that if any data upon this important subject are desired, we must establish a general system of local registration.

Very nearly the same difficulties exist with regard to the recording of births, but with this difference, that, whereas the returns of deaths cannot be corrected, except within very large limits of error, the real amount of births can be approximately recovered, if the Census as to ages be tolerably accurate. In 1851, a column of births was given, and also a column of numbers living under one year, the former being

manifestly incorrect, because the returns, from one end of the country to the other, shewed a larger number living, than were said to have been born. The number living under one at the end of the year is evidently that of the survivors of those born during the year, and if the deaths under one had occurred with equal frequency in each month of the ages of the children, we should have to add on the average, one half of the number of deaths to the number living, to make up the births; but as a greater number die in the earlier months we should have to add rather more. Taking the New York Census as a guide, where the numbers dying for the first year are given from three months to three months, we should add nearly two-thirds of the deaths under one year. The births in Canada in 1851 would, upon this principle, be about 80,200 instead of 69,420, as given in the Census.

In 1861, in order to avoid this evident anomaly, I suppose, the column of births, as returned by the enumerators, and which was clearly very imperfect, was omitted altogether; but by some singular confusion of ideas, the number living under one was headed "births." I have examined some of the enumerators' schedules, and this appears to have been the course adopted in the Census office; but there is no one now left in the department who was engaged in the work, and I have not been able to ascertain the fact precisely; it is certain, however, that the column headed births is added up in the total population, as if it had been the number living under one. Assuming this to be the case, and proceeding as before, the corrected births in Lower Canada would be 43,264 instead of 40,788, and increasing those in Upper Canada in the same proportion, they would be 56,406 instead of 53,178, showing the percentage on the population respectively of 3.892 and 4.031.

The manifest imperfection of the returns, as they stand, will become evident from the following table, shewing the rates of births and deaths to the whole population from the returns of other countries:

	Births.	Deaths.	Annual Increase.
Lower Canada, 1861	3.672	1.174	2.498
do. do. as corrected	3.892	.....	.....
Upper Canada, 1861	3.809	.731	3.178
do. do. as corrected	4.031	.....	.....
New York, 1855	.....	1.36	.....
do. do. approximately corrected	3.078	2.300	.778
United States, 1860	.....	1.27	.....
do. do. corrected	.....	2.20	.....
Great Britain, 1859 to 1861	3.465	2.163	1.302
Russia in Europe, 1859	4.335	3.485	.850
Poland, 1840 to 1857	4.102	3.571	.531
Finland, 1857	3.503	3.251	.252
Sweden, 1851 to 1855	3.107	2.117	.990
Norway, 1851 to 1855	3.235	1.722	1.513
Denmark, 1850 to 1859	3.311	2.196	.928
Bavaria, 1852 to 1857	3.342	2.884	.458
Saxony, 1855 to 1858	3.993	2.965	1.028
Prussia, 1855 to 1858	3.831	2.928	.903
Holland, 1855 and 1856	3.184	2.536	.648
Belgium, 1840 to 1851	.....	2.45	.....

The rates per cent. of births in Canada, do not differ so materially from those of other countries, as to lead us to infer that they are seriously misstated; and as I have corrected them by the deaths under one, they are probably not far from the truth, though from the imperfection of the returns of deaths, they will be somewhat understated. But it is impossible to believe the rate of mortality, even if we had not other reasons for doubting it, to be even approximately correct. In connection with this subject, moreover, we encounter another source of error, the extent of which it is very difficult to estimate. We have seen in what particulars the information given to the enumerators was likely to be faulty; there is also some opening for further misstatements, from carelessness on their part in recording in their schedules the returns made to them; but, as far as the vital statistics are concerned, the forms are so simple, that I have no doubt the schedules are substantially correct. These schedules were then submitted to the Census clerks, who distributed the matter into a great variety of columns; a kind of work, which, unless a perfect system of checking be established, is always liable to produce errors. I am afraid, however, that there was no uniform system, under the inspection of a responsible head, and it is rumoured, I know not with

what truth, that when the details did not correspond with the totals, from which they were distributed, the correspondence was arbitrarily forced, or, as the expression goes, the figures were cooked. If this was so, the operators shewed themselves very indifferent cooks, for numerous discrepancies still remain. I have not examined the details to any great extent, but, for the purposes of my investigation, I classified the counties of Lower Canada according to the French element of the population, and took out the ages and deaths of each class separately. I naturally checked my work, by comparing my totals after the new distribution, with those given in the tables, and I found numerous discrepancies. When I could discover no error in my own figures, I added up the columns as printed, and the result has been most materially to shake my confidence in the accuracy of the Census clerks. There were not above half a dozen errors in the additions of the columns of ages, but in the cross additions of the deaths by counties, out of sixty-five columns, of which the table consists, I found twenty-seven to be wrong. The difference between the total deaths as given, and the real total of all the details, is not very great, being respectively 12,928 and 13,103; but this is only because the individual errors balance each other. In some of the counties the difference is very great: thus in Lévis, the total of deaths is given as 142, but the details at the several ages add up to 205. As far as this particular question of the number of deaths is concerned, these errors are of little importance, because the figures, whichever way you take them, are evidently worthless, but they lead one to look with considerable suspicion upon other parts of the table, the ages for instance, where a similar distribution of the enumerators' returns has been made by the Census clerks.

I have given below a comparative table of several different countries, shewing the proportions per cent. living at different ages:

PERCENTAGE OF POPULATION AT DIFFERENT AGES.

	Canada, 1852.	L. C., 1861.	U. C., 1861.	N. Y.	Great Britain	Belgium	Norway	Denmark
		16.731	17.731	13.69	13.08	11.64	13.526	12.88
Under 5.....	18.23	13.593	12.783	11.37	11.70	10.91	11.402	10.725
5—10.....	13.77	12.421	12.160	10 81	10.73	9.77	9.997	9.943
10—15.....	12.18	11.828	11.515	10.36	9.89	8.99	8.554	9.501
15—20.....	11.87	16.806	17.660	19.87	17.46	16.62	17.423	16.187
20—30.....	16.97	10.476	11.330	14.06	13.09	13.52	13.557	14.286
30—40.....	10.86	7.365	7.745	9.08	9.82	11.80	8.758	10.355
40—50.....	7.34	5.127	4.736	5.47	6.89	7.81	7.805	8.182
50—60.....	5.43	3.244	2.667	3.11	4.51	5.49	5.690	5.010
60—70.....	2.41	1.850	1.339	1.71	2.83	3.45	3.289	2.925
Over 70.....	1.28	.556	.335	.47	.....	.....	.....	.....
Unknown	.....							
Under 20.....	56.05	54.573	54.189	46.23	45.40	41.31	43.479	43.053
20—50.....	35 17	34.647	36.735	43.01	40.37	41.94	39.738	40.828
Over 50.....	9.12	10.221	8.742	10.29	14.23	16.75	16.784	16.117

In spite of the marked difference which there is between Canada and all the other countries, in the distribution of the population as to ages, there is such a close resemblance between the Censuses of 1851 and 1861, as to lead to the inference that we have here a real characteristic of our vital statistics. It can only be very partially owing to immigration, for the State of New York, which is similarly affected in this respect, exhibits a very different law of population. It may be interesting to inquire what effect immigration would have upon the classification by ages. The immigration returns of the United States for the last fifty years, shew that immigrants of all ages arrive in the country, and that there is a great uniformity in the proportions at different ages in successive years. Considerably more than one-half of any importation would have no sensible effect upon such a table, as it would only add to the total numbers, without disturbing the relative proportions; and of the remaining part, the effect would be in round numbers, that 10 per cent. of the immigrants would increase the numbers between 15 and 20; 25 per cent. those from 20 and 30; and 10 per cent. those between 30 and 40. But as the whole annual immigration of late years, even in Upper Canada, has apparently rarely exceeded from 1 to 2 per cent. of the population, the numbers between 20 and 30, where the effect is the greatest, would not be very materially altered. When, however, the immigration has continued for many years, what disturbance there was, would

hardly be perceptible, as the wave of excess of population, commencing between 20 and 30, would gradually extend into the higher ages, and would be succeeded by a similar wave of the descendants of the first immigrants, which would fill up the lower ages in a similar proportion. Almost the only noticeable consequence of immigration, as exhibited in this table, especially in Upper Canada, appears to be the small numbers in extreme old age, to which the wave of the great immigrations of 25 or 30 years ago has not yet reached. The great excess of the numbers between 20 and 40 in the State of New York, appears to be owing, not so much to the influx of permanent settlers, as to the temporary resort of persons in the prime of life to the great commercial centres. This tendency is more clearly visible if we take those counties alone, in which the great cities are situated, which exhibit an excess of 6 per cent. on the whole population between the ages of 20 and 40, over what is found in the country parts.

It is not easy to draw any safe inference from such a table of population, as both a high rate of births, and a high rate of mortality have a similar effect in rapidly reducing the proportionate numbers living at the several ages. Indeed, from the great preponderance in all countries of the deaths in the first few years, the two things almost necessarily go together, and an increased number of births involves an increased rate of general mortality. Such a scale, however, as that exhibited by Canada, is generally characteristic of a population growing rapidly by natural increase. If we look more into detail, many anomalies present themselves, which throw a suspicion upon the accuracy of the enumerators. Thus, it is hardly possible to conceive any law of mortality, which in five years would reduce the $17\frac{3}{4}$ per cent., said to be living under 5 years in Upper Canada, to the $12\frac{3}{4}$ per cent. living at the next period. In as far as it may be relied upon, this would point to a very large percentage of births with a fearful mortality in the earlier years. Other minor difficulties present themselves in the progress from year to year, but in its general features I am inclined to think, that this constitution of population is a true and remarkable characteristic of Canada.

Irrespective of the proportions between births and deaths, with regard to which the Census affords us such doubtful data, there are some other sources from which we may obtain an approximation to the natural increase of the population—of Lower Canada especially. The population of French origin is absolutely unaffected by immigra-

tion, what change there has been being in the opposite direction, but if we compare the Census of 1852 and 1861, the numbers of French origin in Lower Canada have increased at the average annual rate of 2.651 per cent., irrespective of those who have left the country in the meantime, which is double the rate in Great Britain, and 40 per cent. more than in Norway, which shews the highest natural increase of any European country, and seems to keep up its character as an *officina gentium*. We may even push our researches to a much earlier period. A Census of Canada was taken with great care just before the conquest. It is frequently referred to in the official correspondence of the day as in progress, but I am not aware that the exact result has been preserved. We have, however, a despatch of Montcalm, of the date, April, 1759, in which he says, that the great Census is at last complete, that he has not as yet seen it, but that it shews a population of 82,000. A Census was again taken by the British authorities in 1765. It was contained in two large folio volumes, preserved in our own library, the first of which was lost in the fire, but the second, which was saved, fortunately contains a recapitulation, shewing the population of the rural districts, exclusive of Quebec and Montreal, to have been 54,275. There is also a note to the effect that including the towns, and making an allowance for the people absent in the woods, the whole population is estimated to be 80,000. This, taken in connection with Montcalm's despatch, appears to afford us a pretty secure basis. Since that time there has been no immigration, except of a few Acadians, whilst there has been a considerable loss to the United States. But if we take the population of French origin in both sections of the Province, we shall have a pretty fair representation, though somewhat understated, of the descendants of the 80,000 Frenchmen who inhabited Canada in 1765. The French Canadians must, therefore, have increased during the 96 years, at least at the rate of 2.53 per annum.

We have also a system of registration in Lower Canada, much more perfect than anything in Upper Canada, although there is still great room for improvement. The Prothonotaries' returns for 1861 are much more complete than those for 1860, the year for which the births and deaths are given in the Census. Taking then the returns of 1851, and leaving out of account many of the counties from which no returns have been received, and others which are on the face of them imperfect, leaving out of account, also, Montreal and Quebec, I

find forty-one counties with an aggregate population of 626,830, the returns from which appear to be tolerably perfect, and they shew 26,954 baptisms and 9,939 burials, which represent

Births - - - - - -	4.300	per cent.	on the population.
Deaths - - - - - -	1.586	"	" "
Natural Increase - - -	2.714	"	" "

These numbers, I have no doubt are rather understated for the counties, in consequence of the imperfection of some of the returns, but the greater mortality of the cities will reduce the rate for the whole Province. To approximate to this we may estimate the remaining counties from the forty-one from which we have returns and then add the cities. Upon this principle I have included the towns of Three Rivers and Sherbrooke, amongst the counties, and I have taken the county of Quebec with the city, as they cannot be clearly distinguished in the returns. The result shews, for all Lower Canada,

Births, - - - - - - -	4.034	per cent.
Deaths, - - - - - -	1.755	"
Natural Increase, - - -	2.279	"

With a view of still further testing the subject, I analysed, with great care, the Prothonotaries' returns from 1851 to 1857, inclusive, since which latter date they have not been published. The returns for 1853 are also missing. With the exception of Rimouski, Kamouraska, Ottawa and Pontiac, the returns of the Roman Catholic Clergy seem very perfect, but those of the Protestant denominations, except in the cities, are often wanting, and when they do appear, they are obviously imperfect. I therefore only took the Catholic baptisms and burials, and the Catholic population, leaving out those counties or parishes, from which no returns were given, and rectifying the population to the date of each return by the average annual rate of increase from 1852 to 1861. This calculation, which does not seem liable to any serious objection, gives the following result for the Roman Catholic population of Lower Canada:

COUNTIES FROM WHICH RETURNS WERE RECEIVED.

	Births.	Deaths.	Nat. Increase.
1851	4.688	1.738	2.960
1852	4.827	1.778	3.049
1854	4.411	2.007	2.404
1855	4.269	2.037	2.232
1856	4.496	1.758	2.738
1857	4.256	1.698	2.558
Average	4·491	1.836	2.655

QUEBEC AND MONTREAL, INCLUDING COUNTIES.

	Births.	Deaths.	Nat. Increase.
1851	5.023	3.566	1.457
1852	5.168	3.219	1.951
1854	5.435	5.442	.....
1855	5.080	3.234	1.846
1856	4.920	3.054	1.866
1857	5.066	3.086	1.980
Average	5.115	3.600	1.515

ALL LOWER CANADA—assuming the Counties and Parishes from which there are no returns to have the same average rates as other Counties.

	Births.	Deaths.	Nat. Increase
1851	4.736	2.004	2.732
1852	4.877	1.988	2.889
1854	4.560	2.507	2.053
1855	4.395	2.223	2.172
1856	4.562	1.959	2.603
1857	4.382	1.713	2.469
Average	4.585	2.099	2.486

It will be observed that the rate of natural increase, as deduced from 1861, is quite within the limits of the variations in this respect in different years. But making every allowance for the imperfection of the returns of 1861 the smaller rate for both births and deaths in that year is very remarkable. As I before observed, the deaths naturally rise and fall with the births, from the great mortality in infancy, but this nearly constant decrease of births since 1851, seems to point to a large emigration of persons in the prime of life. Nevertheless the rate of increase is very high as compared with other nations, and it is confirmed by the growth of the French population from 1852 to 1861, and during the much longer period since the conquest.

Rate of increase of French from 1765 to 1861	2.53	per ann.
Rate of increase of French from 1852 to 1861	2.651	per ann.
Rate of increase of Catholics in counties (mostly French) from 1851 to 1857.....	2.655	per ann.
Rate of increase of Catholics in all Lower Canada from 1851 to 1857.....	2.486	per ann.

The near correspondence of the numbers arrived at by such very different methods, inspires great confidence in their general accuracy, and appears to place Lower Canada amongst the most rapidly increasing nations in the world.

In Upper Canada it is not possible to form any similar conclusion. The clergy are required there also to make returns to the Clerks of the Peace, but very few of them reach the Government. The only county, from which I can find anything approaching to systematic returns, is Haldimand, and they are not perfect enough to serve as the basis for any conclusion, even if a single county were sufficient to yield a trustworthy average. But if we cannot arrive at any such satisfactory result, as in Lower Canada, we may make some comparisons as between the two sections, as far as regards the number of births, which forms one important element of their relative rates of increase. The births, as corrected from the number living under one, according to the Census, do not differ very materially from those shewn in the Prothonotaries returns. In the 41 counties of Lower Canada, in which we can institute a comparison, the number living under one, called births in the Census, is 23,353, and if we add to it a proportion of the deaths, as before explained, the number becomes 24,653; but as the Prothonotaries' returns relate to a year later than that for which the Census was taken, the whole population, and consequently the births, would have to be increased at the average rate of about $2\frac{1}{2}$ per cent. The numbers, as corrected to the same period, would therefore be 25,279 against 26,954. The main difference is in the deaths, the Prothonotaries' returns giving 9,939 and the Census only 6,498. We may, therefore, for the purpose of comparison between the two sections, take as approximately correct, the births as above deduced from the Census, viz.: Upper Canada, 4.031; Lower Canada, 3,892. This greater proportion of births to the whole population is what one would *a priori* expect from the greater number of the people in Upper Canada at the reproductive ages: but if we take the percentage on the number of married women under forty, which

appears to be the truest criterion of the prolificacy of the two sections, the proportions are reversed. With a view of testing the generally received opinion of the greater prolificacy of the French race, I classified the counties in Lower Canada according to their French element, omitting the cities altogether, and I found that in those counties, containing 80 per cent. and upwards of French, the percentage of births to married women was 45.629, whilst in the rest of Lower Canada it was only 40.352, and for all the counties in Upper Canada, also omitting the cities, it was 42.772. The difference is so great and so uniform, even if smaller divisions are taken, that I am inclined to believe that it is truly characteristic, if not of the races, at least of the habits of society amongst them. How far the greater fecundity of the French may be modified by a different rate of mortality, we have no means of judging at present.

If we endeavour to discover the effect of immigration upon Lower Canada, it is observable that the general increase during the nine years since the former Census was taken has been at the average rate of 2.498 per annum, which is almost exactly the same as 2.486, the percentage of natural increase on the average of the several years from 1851 to 1857. The inference seems to be, that there has been no sensible difference between the numbers who have left Canada and the new importations. If we consider separately the population as classed under its origins, taking the figures as we find them, it would not appear that there has been any considerable emigration of the French population, for its rate of increase has been almost as great as the natural increase of the counties, and there is rather a larger proportion of French than in 1852, about 76 per cent. against 75 per cent. It is difficult to reconcile this conclusion with the general belief in a large emigration of French. Our loss in this respect may have been over-rated, or the difference may be owing to the imperfection of the Census of 1852; or if it can be attributed to neither of these sources, it would follow that the natural increase must have been even higher than I have estimated it. The numbers of foreign birth are almost the same at both periods, 96,668 in 1861, against 95,153 in 1852, showing that the importations have more than counterbalanced the deaths during the interval. The principle change is in the natives of other origin than the French, whose average annual increase, 2.019, has been much less than the annual natural increase, indicating

some considerable emigration of this class, or a much lower natural increase than of the French population.

In Upper Canada, from our ignorance of the rate of mortality, it is not very easy to estimate the effect of immigration, but some important indications may be obtained from a comparison with former Censuses. The first enumeration of the people in Upper Canada with which I am acquainted, was in 1811, when the numbers are stated as 77,000. Up to 1824, when the population was 151,097, the annual increase was at the rate of 5.32 per cent. From that date until the Union we had a tolerably correct enumeration almost annually, and we may exhibit the successive additions at nearly equal intervals.

Date.	Population.	Rate of Annual Increase.
1824	151,097	
1832	261,060	8.77
1842	486,055	6.41
1852	952,004	5.62
1861	1,396,091	4.35

The last rate, which is the average for nine years, is less than the lowest recorded for any previous year, with the single exception of 1826, when it was 3.59. The greatest increase recorded is that from 1832 to 1834, the average for the two years being 10.73. This constant decrease of accessions from without, point to a rapidly approaching period, when we must mainly depend for increase of strength upon the natural growth of the people already settled in the country. A large proportion of the increase is, however, still to be attributed to immigration, and it is an interesting enquiry what that proportion may be, and how much is due to natural growth. The data are very imperfect, but we may arrive at a very rough approximation, or at least ascertain the limits within which the additions from immigration and from natural increase must have been.

If we assume the natural increase of Upper Canada to be at the annual rate of $2\frac{1}{2}$ per cent., which is nearly the rate arrived at for the whole of Lower Canada, from the Prothonotaries' returns, there would remain an addition of 207,170 to the population unaccounted for, and which, on this supposition, must have arisen from immigration. The returns of the Emigration Office shew, that from 1852 to 1860, both years inclusive, 225,865 steerage passengers arrived at the ports of

Quebec and Montreal, and 123,631 appear to have come through the United States, during the same period. Of these, 181,741 are returned by the local agents as being settled in Upper Canada. Allowing for the natural increase of these at the same rate, for the mean period of 4½ years, the number would be raised to about 200,000. This appears to be the extreme possible limit to which immigration can have swelled the population, and it would require a natural increase of rather more than we have taken for Lower Canada, to account for the remainder.

But the numbers who are supposed to have permanently settled in the country, are probably stated too high, and there has notoriously been an emigration of persons living in Upper Canada before 1852, which must have most materially reduced the balance. The numbers of foreign birth living in Upper Canada in 1852, were 399,494, which, in 1861, had become 493,212, making an increase of 93,718. All of these must have been immigrants, and there must have been as many more as would replace those of the 399,494 who had died. As a great number of them would be in the prime of life, we can hardly estimate the rate of mortality as high as 1 per cent., but, even on this estimate, the numbers of new emigrants would only be about 128,000, or with their natural increase as above, abont 140,000, so that the increase based on the Emigrant Agents returns, would appear to be overestimated. But, on the other hand, the United States Census shews that the natives of British America had increased from 147,200 in 1850 to 249,970 in 1860. The several provinces are not distinguished in the United States returns, but in the State of New York, in 1855 the Canadians were rather more than nine-tenths of those from all British America. Even allowing that in Maine and other Eastern States, a larger proportion may have been from New Brunswick and Nova Scotia, and that there were certainly many Lower Canadians amongst them, it is hardly too much to assume that of the 102,000 added to the population of the United States, one-half were from Upper Canada. This would leave a very small balance in favour of Upper Canada, certainly not as much as 100,000. If we estimate the whole accession due to immigration at that amount, it would require an average rate of natural increase to account for the whole number, of at least 3½, which appears much higher than is probable. The truth probably lies between the two limits as thus arrived at, but it seems

certain that the natural growth of the population in Upper Canada must be more rapid than that of Lower Canada.

I have been induced to enter into these details partly with a view of shewing what conclusions we may draw, with some degree of confidence, from the statistical data to which we have access, and partly to point out the extreme insufficiency of these data, and the doubts which must rest upon many points of the utmost importance in relation to the future prospects of our country. My labour will not have been in vain, if any one should be indnced by the observations I have made to press upon the Legislature the necessity for organizing some system upon which more trustworthy statistics may be obtained. The main things which appear to be wanted are—a more perfect organization for collecting and tabulating the facts, and a greater frequency in the returns by a compulsory local registration. The decennial census would still be necessary, as there are many important facts, which it would be too cumbersome and expensive to attempt to collect at shorter intervals; but there are also many details which could easily be recorded annually, and which could then be obtained with much greater accuracy. Not the least advantage to be derived from a more frequent registration would be, the preparation which it would supply for conducting properly the more perfect decennial Census. The collection, tabulating and discussion of the multifarious details of a great Census, simple as each individual process appears to be, require some special training in those who are engaged upon it, and a well devised system of checks under a responsible head, to prevent the recurrence of such gross errors as are to be found in the two last Censuses. It is hardly possible to expect any much better result to follow from the returns of enumerators, who have had no experience in the work expected from them, and from submitting their schedules to a body of extra clerks, called in for the occasion, who appear to have worked without concert, and almost without supervision.

The system which I would recommend, as most likely to produce a valuable body of statistics, would be the following:—It might still be desirable to require the clergy of the several denominations to make returns of their marriages, baptisms and burials, as at present; but the baptisms and burials after all only approximately represent the births and deaths, and experience has shewn that it is almost impossible to obtain, in this way, punctual and correct returns; and in Upper Canada especially, as in other countries where there are a great variety

of religious denominations, it would be hopeless to expect any accuracy from such a source. These returns might act as a check upon the facts as otherwise obtained, but there can be no system of registration approaching to completeness other than a compulsory civil registration, as in England and most European countries, and in some of the states of the neighboring Union. Every person should be bound under a penalty to register with some local officer, within a given time, every death or birth occurring in his family, and in order to remunerate the officer, and to give him an interest in the completeness of the registry, a small fee should be payable to him on each entry. I would take advantage as far as possible of our present municipal organization, and, in Upper Canada at least, the local officer might be the township clerk. As the township clerk is often changed, and as there is generally no proper office in which the registers could be safely kept, I would require the township clerk to file the originals with the registrar of the county, at the end of every quarter. These registers, besides their use for statistical purposes, would serve as an authentic record of births and deaths, which, together with the registration of marriages, which is already made in the registrar's books, would be always open for reference in questions of succession to property. Both objects should be kept in view, and the form of the registers might perhaps be something like the following:—The township clerks might be supplied by the registrar with sheets ruled in columns shewing, for births—date of birth, sex, name, father or mother's name, signature of person making the registry, date of registry; and for deaths—date of death, name, age, disease, signature of person making the registry, date of registry. Each sheet, when returned to the registrar, should bear the certificate of the clerk. In Lower Canada, where the municipal organization is not so perfect, it might be desirable to have some other local registrar than the township clerk, and the sheets might be deposited as at present with the Prothonotary; but the forms, and as far as possible the system, should be uniform in the two sections, and the registration should be that of births and deaths, and not merely the ecclesiastical record of baptisms and burials.

It should also be incumbent upon the assessor to have a column in his roll for the numbers in each family. This used always to be done in Upper Canada before the union, and gave very little trouble, and the numbers under fifteen are still given for school purposes. It

might be desirable to distinguish males from females, and to have some general classification as to ages, as under 5, 5–15, 15–40, above 40, but it would not be wise to enter into too much detail. This portion of his roll should be made out separately, and should be handed over by the clerk to the county registrar.

I would throw upon the registrar the duty of compiling from these materials the returns to be made annually to government, on forms to be furnished to him, which should not enter into too much detail, and I would pay him out of provincial funds for the work. The remuneration need not be very high, and the total cost would be quite an insignificant item; but I hold it as a most essential part of any such scheme, that everybody should be paid for the work imposed upon them. It is the only way in which correct and punctual returns can be expected. However conscientiously even the best men may perform any act required of them as a duty, they will do it more readily and more certainly, if besides discharging the duty, they make $20 or $30 by the transaction.

With such an organization we should have a certain set of men all through the country, the assessors, the township clerks, and the registrars, who had already some experience in the kind of work, and they would form a useful material, out of whom to select the enumerators and commissioners, when the more formal Census came to be taken. There would remain the organization of the department of government, on which would fall the duty of classifying and tabulating the returns received from the whole country. The returns of vital statistics would form only one portion of this work. The statistics of trade and navigation, of railways, of banks, savings banks, building societies, insurance companies, hospitals and charities, and schools, criminal and other judicial statistics, militia and municipal statistics, should all be ultimately combined into one annual volume. The preparation of these, and still more, the devising of the best forms in which the information should be collected, and presented to the public, would require much miscellaneous knowledge and experience, which could hardly be expected to be found in any one department. There should be a board of statistics, presided over by one of the Executive, and of which some others of the ministry, the minister of finance especially, might be members. But the real work would fall upon the deputy heads of those branches, which are especially concerned with the subjects embraced in the general plan, and who

should also be members of the board. The business of the board, as such, would be almost exclusively deliberative—to decide upon what information should be collected, and to devise the best forms in which it should be submitted, so that the statistics of one branch might harmonize with, and throw light upon, those of another. I may give an example of what I mean: The trade and navigation returns shew the amount of timber and lumber exported, and the report of the Commissioner of Crown Lands gives the statistics of the several timber agencies; but from want of concert between the two departments, the forms in which the returns are exhibited make it impossible to connect the two sources of information upon this most vital portion of our industry, so as to trace the article from the various sources from which it was produced, to the quarters in which it found a market. The board would only lay down a general plan; the individual members would each be responsible, as part of the business of his own department, and with his own staff, to collect the information required. The only other thing required, besides the occasional assistance of copyists, would be a thoroughly competent secretary, with perhaps, one clerk, who would collect some of the returns, and superintend and publish the whole.

REMARKS ON THE PRINCIPLES OF CLASSIFICATION IN THE ANIMAL KINGDOM, IN IMMEDIATE REFERENCE TO A RECENT PAPER BY J. W. DAWSON, LL.D., F.R.S., PRINCIPAL OF McGILL COLLEGE, MONTREAL.

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(Read before the Canadian Institute, January 28th, 1865.*)*

THE number of the *Canadian Naturalist,* for August, contains a paper by Dr. Dawson, of Montreal, (of which he has also obligingly favored me with a separate copy), entitled "Elementary Views of the Classification of Animals." The opinions of naturalists on the

subject of classification being, at present, very unsettled; so that the greatest names of thoughtful observers of nature, and useful labourers in bringing to light new facts, may be quoted in support of the most opposite methods, and teachers in different schools are exceedingly likely to vary in their plans, if my esteemed friend Dr. Dawson's views had differed very widely from my own, I should neither have been greatly surprised, nor have thought myself at all called upon to enter into controversy with him on the subject. But when I find in his paper a remarkable agreement on what are, certainly, the most important points, with the principles I have maintained and taught for a good many years, and where he differs from me in matters of detail, which are still of great interest, that he has given his reasons concisely and clearly, so as to afford the opportunity for a candid discussion of the merits of the case, I am tempted, at once, to express my sense of the great value of much of what he has done, and to ask the attention of the lovers of natural science in our Society to the reasons which prevent my agreeing with the author on certain points, and seem, to me, to justify different conclusions. Any notice I may take of the points, in my view the most important, in which I agree in opinion with Dr. Dawson, is not intended to add to the weight of his statements by my humble approbation; but simply to make it understood how far we proceed together, where many others take a different course, and what the questions are which I propose to discuss: questions which, though in some respects subordinate, have all the interest which arises from extensive practical influence on our arrangements. Dr. Dawson's remarks on species seem, to me, just, and of fundamental importance, deserving the attention of all students of natural history, and well fitted to counteract some prevalent errors.* The section on "genera and higher groups" is, also, in general accordance with my views, and seems to me a well considered statement of great principles; but I would venture on one or two observations, occurring to me, in connection with it. The author

* I must confess that I cannot help desiring a more satisfactory definition of a species, than a group of individuals which may have had a common descent. I have thought of something of this kind: a group of beings, having similar organs for the performance of the vital functions, disposed precisely on the same plan, and—allowing for differences of age or sex, and minor peculiarities, shown by experience to be unimportant,—developed in the same relative proportion. If, however, this definition could be made entirely unobjectionable, as clearly marking all that enters into the received idea of a species, it would, of course, leave questions respecting their origin and permanence exactly as they are, and we could go no farther without assuming the very points which require proof, so that nothing can be practically gained in this direction.

having laid it down that "in comparing species with each other, for purposes of classification, there are four distinct grounds on which comparison can be made: 1st. ultimate structural, or anatomical resemblance; 2nd. grade or rank; 3rd. use or function; 4th. plan or type;" proceeds to explain the value and mode of use of each of these, in remarks well deserving attention. I must, however, hold to be very doubtful the opinion of Agassiz, here adopted by Dr. Dawson, that difference of grade and rank is to be specially used for grouping genera into orders. Order is the name employed in natural science to express groups of organisms, next in extent to what are called classes, which were formerly regarded as the primary divisions of the kingdoms of nature; though, with increasing knowledge, it has been found necessary to interpose sub-kingdoms, or branches. I have not yet been able to appreciate the reasons why groups of one degree of comparative extent, should be founded on a different kind of characters, or a different mode of considering them from those of either a higher or lower degree; and, practically, I must maintain that there is a gradation of ranks in the sub-kingdoms of each kingdom, in the classes of each sub-kingdom, and in the families and sub-families of each order, as well as in the orders of a class. Nobody doubts that Vertebrata is the highest sub-kingdom of the animal kingdom. Mammalia is universally received as the highest class of Vertebrata. Aves comes next, then Reptilia, and Pisces takes the lowest rank; whilst those who admit Amphibia, insert it between the last two. Grade, or rank, is not then used, only or chiefly for orders, and neither are the orders usually admitted founded exclusively upon it. On the other hand, when two groups have manifestly a common plan, and corresponding sub-divisions, but differ greatly in grade of development, they are now usually regarded as sub-classes of one class, whilst their corresponding sub-divisions are called orders, a practice entirely at variance with what is here laid down. Dr. Dawson alleges, as an instance of a grave error, arising from the improper application of difference of grade or rank, "the attempt of some naturalists to establish a province or sub-kingdom of *Protozoa*, to include all the simplest members of the animal kingdom." I am afraid I fall under my friend's censure in this matter, as being one who deem the admission of Protozoa, as a sub-kingdom, necessary for the right interpretation of the system of nature; but I must protest against being supposed to defend their separation on the ground of

their inferiority of grade, though they, undoubtedly, occupy the lowest grade in the animal kingdom; and, I think, on reconsideration, Dr. Dawson will find that, whilst the name Protozoa is proposed for an assemblage of low forms of animal life, possessing certain remarkable common characters, those who have adopted it have carefully excluded other almost equally low forms, which display the characteristics of any of the other sub-kingdoms. If the principal characters be negative, which is very apt to be the case with the lowest division of any great group, as being what is left when the others are withdrawn, and known by the absence of all their distinctive peculiarities, yet, if the remnant of the animal kingdom which cannot, with any appearance of propriety, be referred to any of the four recognized plans of structure, consists of beings considerably resembling each other in substance, vital functions, and the means by which these are performed, so far as they are known, a tolerably secure foundation is laid for the fifth sub-kingdom; and, if all its members, as in the case of Radiata, may be referred to three distinct classes, (Porifera, Rhizopoda, Ciliata,) this analogy with the nearest sub-kingdom confirms the argument. Agassiz is the most formidable opponent of the separation of Protozoa, and every opinion of his deserves to be carefully weighed, and treated with respect; but, in the present case, we find him obliged, in opposition to the views of all who have most carefully studied them, to send back the Sponges to the vegetable kingdom, and, in defiance of recent exact observation, to return to the old plan of treating Foraminifera as low forms of Cephalopods; besides that, because his own acute observation had proved some supposed Ciliata to be embryonic forms of higher animals, he, too hastily, concludes that all the Ciliata will probably admit of the same explanation, although of some of them the whole life-history may be said to be ascertained. I cannot but think that, in this case, a preconceived opinion established in his mind, and, having a fixed place in his general system, has prevented this great naturalist from perceiving the truth with his usual sagacity. I, at least, find my convictions strongly opposed to this opinion of Dr. Dawson, high as is the authority by which he might support it.

In the section on the general nature of the animal, the distinctions between the animal and vegetable kingdom are by no means free from objection. The first is merely verbal, since eggs and seeds are essentially of the same nature, and cannot always be distinguishe

The third is hardly correct, since the lowest animals have no apparent nervous or muscular system, and, in their case, we cannot be sure of *voluntary* motion. Spontaneous movements are seen in many plants. The fourth is a mere assumption, not affording the least assistance as a means of distinction. Sensation cannot be proved in the lowest animals, nor its total absence in plants; and there are animals without organs of sense, or any distinct nervous system. Even in the second distinction, it is hardly safe to refer to the animal building up its tissues chiefly of nitrogenized matter, since some known animal tissues are of the same nature as cellulose, and nitrogen is found in the protoplasm in every active vegetable cell. The best distinctions seem to be, that in the animal the means of absorbing nutriment are within the animal frame, the food being brought within the body before it is placed within reach of the absorbents, whilst in the plant the absorbents are external; and that the animal is nourished by organized substances, animal or vegetable, fresh, or more or less decaying, whilst the vegetable lives upon water, gaseous substances, and salts or metals, in a condition to be dissolved in water, but never directly upon organized matter. Dr. Dawson has here expressed widely prevalent views, presented, in some form, in most introductions to zoology and botany; and, though hardly necessary to my object in this paper, I have taken the opportunity of giving my reasons for rejecting some of the tests commonly recommended for distinguishing the kingdoms. The remainder of the section, in establishing the four general characteristics of the animal, attempts to lay the foundation of that quaternary system in zoological classification which the learned and ingenious author is disposed to favour. As sensation, motion, nutrition and reproduction are the four great functions of animal life, it is concluded, not without great plausibility, that the predominance of each of these in turn will constitute a great division of the animal kingdom, whilst under each of these again a similar cause will produce four secondary modifications, and so on through all the variations which occur. I am myself well persuaded that the beautiful harmony of plan, which claims the perpetually renewed admiration of the intelligent observer of nature, is due to certain tendencies of development in respect to the great functions of life, which, after being manifested in the great branches or sub-kingdoms, are repeated under each secondary type, so as to cause the number of groups at each step in subdivision to be, so far as they exist and are known to us, the same, but whilst

thus far agreeing with Dr. Dawson, and valuing highly his testimony in favour of a great principle, I cannot agree with him as to the actual number of these distinct tendencies which I am compelled to estimate as five instead of four. In regard to the primary division of the animal kingdom into sub-kingdoms or branches, after granting the excellence of the four established by Cuvier, and fully agreeing in Dr. Dawson's judgment respecting Coelenterata, Molluscoida, and Annuloida, I find myself compelled to accept the additional group of Protozoa, because there are many living beings with structural peculiarities adapted to their designed mode of existence which have no relation in their plan of structure to any of the other four sub-kingdoms, and which, notwithstanding remarkable differences among themselves, agree together in the nature of their substance and the simplicity of the means by which the functions of life are carried on. The very illustration drawn from architecture which Dr. Dawson has used to justify his rejection of Protozoa, seems to me to shew the necessity of admitting it as a branch, for surely if I were required to give an account of all human habitations arranged according to their nature, I must not only notice the distinct styles of the higher architecture, but the rudest huts and hovels and the simplest tents must also be described, and their few common features with the absence of the characteristics of the higher styles would bring them together as a class. So when I attempt as a zoologist to give some account of the whole animal kingdom, I must not entirely neglect any really existing group, and if I find many forms which can with no appearance of reason be referred to any of the former plans with which we first become acquainted, although their extreme simplicity must make their characters chiefly negative, I must place them together as a fifth sub-division since there is no other course which would not render the characters of the others nugatory. To me, again, it is an argument in favour of receiving the Protozoa, that, notwithstanding their extreme simplicity and minuteness, they naturally fall under three distinct classes: Rhizopoda, Porifera, and Ciliata, which seem to include them all the very number of classes corresponding with the next lowest sub-kingdom, Radiata and differing from the others only by the absence, of the two higher tendencies which are not specially manifested in these low forms of living beings.

If we can establish five great branches of the animal kingdom the presumption, according to principles admitted and well supported by

Dr. Dawson, will be in favour of five classes to a sub-kingdom, and five sections under each distinct type as we go on with our subdivision, and looking to the actual fact in respect to what seem the most satisfactory arrangements in various portions of the animal kingdom, I find this view confirmed, the remarkable exception in the sub-divisions of the two lowest branches and, as I think, also in the vegetable kingdom, when properly explained, only making the general law more certain. But since Dr. Dawson has given us the four classes which appear to him good and sufficient in each of the sub-kingdoms, I will review these in order to bring my own system into fair comparison with his. In Vertebrata he includes Mammals, Birds, Reptiles and Fishes, omitting Amphibia which he agrees with many others in making an order of Reptilia, considering the distinction to consist chiefly in rank or grade and to be therefore of a secondary kind. It cannot fairly be denied that the remarkably close correspondence of the divisions of Amphibia with those of Reptilia favours this view supposing us to make them, not an order of Reptilia, but a sub-class, an outer circle of corresponding but more rudimentary forms, like the relation of Entozoa to Annulata, but even thus the embryonic and anatomical differences are too strong not to suggest the propriety of their being accounted distinct classes, and the other instances which occur in which, in a natural circle, the third division is terrestrial, the fourth ambphibious, (living partly in water, or near water, from which they derive much of their food), the fifth aquatic, strengthen our expectation of an intermediate class between reptiles and fishes of just such a character as belongs to Amphibia. Dr. Dawson in a note on this point says: "The *Amphibia*, as Dana well argues on the principles of cephalisation, are clearly reptiles, because we arrange animals in their mature and not in their embryonic condition, and because the points of reproduction in which Amphibia differ from ordinary reptiles, have relation to an aquatic habit, and are ordinal or rank characters merely." Elsewhere, also, he objects, and very justly in my opinion, to "basing classification wholly on embryology, or on mere anatomical structure." The truth, I apprehend to be, that in endeavouring to recognise the really distinct types which occur in nature, we employ combinations of various characters, and we succeed so far only as we give its due value to each. There are striking anatomical differences which are only adaptive modifications in respect to secondary differences of mode of life, though a mere technical

anatomist might exaggerate their importance; yet anatomical characters deserve the most careful study, and in innumerable instances furnish the most valuable tests where external form or habit might deceive us. So embryology is one of our best guides in determining fundamental differences of structure, though some of the differences it brings under our notice are secondary, and must not be made too much of. Let us duly weigh the embryological and anatomical differences between Reptilia and Amphibia, in respect to their number and value, and we may perhaps see our way to a satisfactory conclusion. In Amphibians the eggs, as in Fishes, are excluded before impregnation, and are always destitute of any hard protecting covering. There is also, at the commencement of developement, the same partial segmentation of the yolk as in fishes. Again, the alantois and amnion are wanting in Amphibians as in Fishes, present in Reptilia as in Birds and Mammals. In Amphibia, progressive changes which in Reptilia, as in higher animals, take place within the egg, occur after the exclusion of the young animal, constituting its metamorphoses which are specially manifested in the higher members of the group. These seem sufficiently striking and important embryonic characters. Turning to those which belong to the matured structure, we notice the naked skin distinguishing Amphibia equally from Fishes and Reptiles, and to which the only exception perhaps is Lepido siren, if we may assume, in opposition to the high authority of Owen, that on the whole Amphibian characters prevail in it over the Piscine. In Amphibia the two modes of aeration by lungs and gills, the former of which is suppressed in Fishes, the latter in Reptilia and the higher animals, co-exist either during the whole of life or at least in its earlier stages. In Amphibia the ribs which are highly developed both in Fishes and Reptiles are absent or only rudimentary, and the connection of the bones of the head with the atlas is by two articular tubercles, instead of one as in Reptilia and Birds, a structure apparently connected with the imperfect development of the bones of the skull in Amphibia. Without seeking other characters, these seem sufficient to show that Amphibia occupy a well marked intermediate position between Reptilia and Fishes, and it may be doubted whether most of the classes of the animal kingdom have more striking and decisive distinctions, though the long practice of naturalists in combining them with Reptilia and the near resemblance of the analogous forms are apt to confuse our ideas on the subject. The circumstance that

Amphibia, whilst possessing striking peculiarities of their own, both external and internal, and in general appearance more resembling Reptiles, yet in their early embryonic development agree with Fishes in opposition to all the higher classes, seems to me decisive as to their distinct position.

On the second sub-kingdom, Articulata, I need make but few remarks. I agree entirely with Dr. Dawson in placing Arachnida as the first, or what he calls the nervous class, which manifests the highest development of which the type is capable, and I am pleased to have his support in this view in opposition to the misleading influence of a false analogy.

I differ from Dr. Dawson in believing that the predominance of the Nutritive system, is expressed by two different plans of development, thus introducing a fifth type of structure. The one tending to fulness of figure and the use of the ordinary modes of appropriating food, but without violence being required for the purpose, and accompanying terrestrial habits of life when at all suited to the prevailing structure; the other tending to an elongated figure, to a suctorial or anomalous mode of appropriating food, and, usually, to semiaquatic habits of life. Of course I regard Worms (Annulata) as the second nutritive type, and the question with me is, whether a fifth great group can be found in the sub-kingdom, suitably representing Dr. Dawson's embryonic or reproductive class. Now those who have read a few of the popular works on Zoology will have been asking themselves how it is that Dr. Dawson's arrangement overlooks the Rotatoria or Rotifera—the wheel animalcules to which their attention has been directed in those works. We must presume that he has thought that they might be treated as low forms of Annulata or Crustacea, and having thus disposed of them to his satisfaction has not felt obliged to speak of them in so general a view of the subject as his paper offers. Nevertheless, the characters of the class are very clear and definite; the discussion which has been carried on by eminent zoologists as to its nearer relationship to Crustacea or Annulata have served to establish its distinctness from both, whilst proving its direct affinity especially with the latter; and whatever may seem rudimentary in its structure especially suits its position as the embryonic class in its sub-kingdom. There are so many high authorities for its being considered as a class, that at present I need do no more than point

out how exactly it is suited to the place I assign to it, completing the five classes of Articulata.

Passing to the sub-kingdom Mollusca, we find Dr. Dawson giving as the four classes, Cephalopoda (about which and its position there can be no difference of opinion); Gasteropoda, in which he includes Pteropoda; Lamellibranchiata; and Molluscoida. I must begin by remarking that the latter name is entirely inadmissible, having been intended by its author to designate a distinct sub-kingdom, so far resembling or approaching Mollusca as to be well named from that circumstance, but not regarded as included in them. When the group so designated is received as a class of Mollusca, a more suitable name must be found. In this I have no doubt that Dr. Dawson agrees with me, though in drawing up this paper he did not judge it necessary to introduce a new term, indicating the animals intended by one already applied to them. I would also propose it as a query whether the Palliobranchiata or Brachiopoda are not better considered according to Vander Hoeven's method, as a sub-class of the same group with Lamellibranchiata, to which as a whole the name Conchifera may be appropriated. It is more important to observe that Gasteropoda have no pretensions, even among the sluggish Mollusca, to be regarded as a *motive* class. Their place is as representatives of the higher nutritive development, whilst Conchifera, both in their mode of appropriating their food and in their general figure, express the lower nutritive or fourth class, and allowing Tunicata, of which *Polyzoa* (I must ask pardon for another verbal criticism, but surely the law of priority gives our distinguished countryman Thompson's name a right to be preferred to Ehrenberg's name, Bryozoa), are only a sub-class, to be rightly placed, we have but to restore the active Pteropoda to their natural and generally admitted position as a class, which a critical examination of their structure would most fully justify, to find the five tendencies fully represented in this sub-kingdom; and I submit that in this and the previous case respecting Articulata, it is not I who am chargeable with creating a class on slight grounds to support a theory, but my friend who sees the arguments for suppressing these classes magnified to his view by the requirements of his theory.

I have sufficiently expressed already my objections to Protozoa being numbered with Radiata, to which they have, so far as I can see, no real structural resemblance, and receiving them as a sub-kingdom.

I have named the three classes into which they may be divided. I have also given a reason why it seems to me reasonable to expect only three instead of five classes in the two lower sub-kingdoms in which there can hardly be said to be any special development of the powers of sense and motion, the nutritive and reproductive systems completely predominating. If it were allowable on this occasion to enter on details respecting the sub-divisions of the classes, I could easily show, as I have on other occasions endeavoured to prove in this place in respect to the more important classes of Vertebrates, that the number five, not three, four, seven, or any other that has been proposed, is the number of natural tendencies appearing, and continually repeating themselves in the divisions of the animal kingdom, and thus producing the order which prevails throughout nature. Our author's seventh and last section relates to the division of classes into orders and families. I have already referred to the higher of these divisions, objecting to the opinion that grade or rank has any special appropriation as a character to orders, and I may add that I assign more importance to families, and regard them as more definite groups, than Dr. Dawson appears to do. It is an ingenious idea that the distinctive characters of orders in each class are mainly derived from the function which the class represents, "for example, the orders of Birds, Insects, Gasteropods, and Acalephæ should be ascertained chiefly by reference to the locomotive organs as being the system of organs most eminently represented in the class," but I question its being in strict conformity with facts, since on the one hand the organs of motion have been much employed as class characters in the sub-kingdom Mollusca, which is the reverse of being specially concerned with motion, and on the other, I must hold it to be reasonably denied that either Gasteropods or Acalephæ at all represent the motive tendency, and granting that they did so, and omitting to insist now on the Pteropods being a genuine class, what can be said of a sub division of Gasteropods which does not recognise as orders Pulmonata, Siphonophora, and Holostomata. The orders of Insecta generally received are exceedingly unsatisfactory, and demand revision, and those of birds depend more on the kind of food and mode of securing it as indicated by the structure of the beak and feet than on the proper motory organs. In most cases, it appears to me, where grade or rank is a special ground of distinction it leads us to sub-classes, represented by concentric circles, in each of which we find corresponding sets of *five* orders, representing in their degree the five tendencies.

With respect to families, I cannot but observe how each good order contains five good families, each family, when large enough to be sub-divided, five sub-families with the same representative character, and it is probable that so far as good divisions can be carried they will maintain the same relations. In this view, as conforming to the law of the number of tendencies, on the expression of which in each sub-division the order of nature depends I presume to think families as necessary to be considered as the larger sections, of which they are component parts. The paragraph respecting the errors of specialists I hold to be sound in principle and deserving of most careful attention, and with it I reach the termination of the task I had imposed on myself. In conclusion, let me repeat that I have been induced to submit to examination in a spirit of sincere respect, and high appreciation of its value, the paper of my friend Dr. Dawson, on a subject to which the members of this Institute know that I have for years given much attention and thought, chiefly because there is so much more in which I entirely agree with him than in similar expressions of opinion by other naturalists, which creates a desire of bringing to the test of examination the remaining points of difference, partly also by the circumstance of his essay falling into the hands of many of my pupils and correspondents, so as to create a desire to give my own views the same advantage, and allow of their being fairly compared with those which prevail around us. In the present state of our science, exact agreement of opinion on the more speculative questions which it suggests cannot be expected, and I should be among the last to lower my estimate of Dr. Dawson's eminent attainments and useful labours in the field of science because he counts classes a little differently from what I do; but I think it may promote inquiry, and create some interest, to bring a different practical application of our common principles into fair comparison with that which he has proposed.

ON ERRATA RECEPTA, WRITTEN AND SPOKEN.

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(Continued from Vol. IX. p. 326.)

III. Foreign Words Anglicised—(*continued*).

2. *Anglicised Italian Words.*

We have already seen that our familiar word *ink* represents the Italian *inchiostro*, a corruption of *encaustum*, a term expressive of the caustic, biting character of the old writing fluids. *Ream* also, denoting a certain quantity of paper, is the Italian *risma*, an abbreviation of *arisma*, which is from the Greek *arithmos*.—*Pencil*, looking as if through the French *pinceau* it were allied to *pennello*, an Italian diminutive of *penna*, is in reality *penicillum*, its classical synonym.—*Desk*, so associated in our minds with the act of writing, is *desco*, the Italian form of *discus*, and means simply a circular table. *Dais* for the upper table in the dining-hall, is the same word. This term, its origin having become obscure, acquired the sense (1) of the tester or canopy over the principal seat at the high-table; and (2) of the raised step on which the high-table was placed.—*Desco* is also used in an abstract sense, as "Chair" in English, for "Chairman" and the authority temporarily vested in the Chairman of a public assembly.

Roll (of papyrus for example, or parchment), keeping somewhat nearer its original than the French *rôle*, comes to us from the Italian *rotolo, ruolo*, which is the Latin *rotulus*. A duplicate or check-roll was in French a *contre-rôle*. Hence *control*.—Our *invoice* is the Italian *avviso* (*ad visum*), to which we have adhered more closely in the commercial phrases "advise," "letter of advice."

"Policy", in the expression "policy of insurance", is borrowed from *polizza*, a corruption of *polyptycha* (pl.) a Greek word denoting a set of writing tablets with many leaves. *Diptycha* for a *pair* of such tablets, is a more familiar word.*—A *register* (Ital. registro) is properly a document in the papal archives—a book in which the gesta

* As a mere guess, *pollex*, the Latin for the *thumb*, has been suggested as the original of this term, the thumb having been employed symbolically in making agreemen's. "Policy", denoting a line of conduct, has an origin entirely different.

of the pontifex maximus *regeruntur*—are orderly recorded for reference. We have but slightly changed the word *protocol* (Ital. *protocollo*), but we have departed to some extent from its first acceptation.—The increase of forgeries induced Justinian* to give orders that no public documents should be held valid which were not written on a certain kind of paper, on sheets having inscribed on them by authority the name of the *Comes largitionum* for the time being. Sheets with this inscription as a heading duly attached were termed protocols (*protos*, *colla-ein* to affix). In diplomacy the documents which form the groundwork of negotiations between imperial or regal plenipotentiaries are still called protocols. Such papers are accredited as issuing from the crowned heads themselves.

* Vide *Novellae Just.*, *Constitutiones*, xiv. c. 2. (A.D. 537.)

Illud quoque praesenti adjicimus legi, ut tabelliones non in aliâ chartâ purâ scribant documenta, nisi in illâ quae in initio (quod vocant protocollum) per tempora gloriosissimi comitis sacrarum nostrarum largitionum habeat appellationem, et tempus quo charta facta est, et quaecunque in talibus scribuntur: et ut protocollum non incidant, sed insertum relinquant: novimus enim multas falsitates ex talibus chartis ostentas et prius et nunc: ideoque licet aliqua sit charta (nam et hoc sancimus) habens protocollum non ita conscriptum, sed aliam quandam scripturam gerens, neque illam suscipiant, tanquam adulteram, et ad talia non opportunam, sed in solâ tali chartâ qualem dudum diximus, documenta scribant. Haec itaque quae de qualitate talium chartarum a nobis decreta sunt, et de incisione eorum quae vocantur protocolla, valere in hâc felissimâ solum civitate volumus, ubi plurima quidem contrahentium multitudo, multa quoque chartarum abundantia est, et licet legali modo interesse negotiis, et non dare occasionem quibusdam falsitatene committem, cui se obnoxios existere demonstrabunt, qui praeter haec aliquid agere praesumpserint. To this Godofredus (*Corpus Juris Civilis*, Tom. iii. Col. 115.) adjoins the explanatory note: "Protocollum non est major et regia charta velut quidam opinantur: nec est scheda negligentius scripta. Non est etiam exemplar formularum quo tabelliones uti solent: sed brevis adnotatio, quae declarabat quo Comite largitionum (sub cujus curâ erant chartariae), quo tempore et à quo praeparatae fuissent chartae."—In "quidam opinantur" Godofredus probably glances at the definition in Calepinus: "Proprie dicitur illud quod breviter et succinctè à tabellione notatur, ut postea per otium quoties opus, latius possit extendi." Calepinus then refers to his remarks under *Macrocolon*, where he says that *macracola* are "majores et longiores chartae, quas nos hodie *chartas regias* vocamus;" but he does not say this of *protocola*. Previous to Calepinus, Tortelius *De Orthographiâ* had also given as one of the interpretations of *protocollum*—"prima illa et raptim confecta scriptura quae aliam magis compositam desiderat." The notion is admitted by both Calepinus and Tortelius that *colon*, i.e. *membrum*, is a factor of *protocollum*.—Meursius, *Glossarium Graeco-barbarum*, p. 460, defines *protocollum* to be "Liber in quo acta à tabulariis perscribebantur."

Pumice, employed in the preparation of parchment for the reception of writing, is the Italian *pomice*, and this, of course, the Latin *pumex*. The French have transformed the word into *ponce*, whence our *pounce* and *pouncet*. Our *sketch*, which the French have made *esquisse*, is the Italian *schizzo*, derived from the Greek *schedios*, which denotes what is done impromptu, with such means as are at hand at the moment. *Caricatura* is an over-*charged* or exaggerated sketch. It is akin to *charge*, and oddly to *cargo*, through the French *charger*, which is in fact the Italian *caricare*, to load, &c. *Motto*, like *ditto*, we have bodily adopted. The French have made out of it *mot*. The original word is *muttum*, a late Latin derivative of *mutire* to mutter.

Some words in English connected with dress, with the material, ornaments, and colour of dress, &c., are disguised Italian. *To dress* —the act itself—is from *drizzare*, and this from the Latin *dirigere* to arrange.

Camicia has given rise to the name of a vestment which in English has a more restricted application than it has in Italian and French. Its root is disputed. Some are for the Celtic *camis* shirt; others for *cama*, Latin, a bed. The ecclesiastical *camise* is the same word. *Camisade*, for a night-attack, in the light of this derivation, becomes picturesque. We see the men with their white *camicie* thrown on over their corselets.—*Pantalone*, i.e. the Christian name Pantaleon, on the Italian stage used to be the Venetian. He has given name to a very familiar portion of our dress.—*Gabardine*, not unknown to the reader of Shakspeare, is, through the Spanish, the Italian *gabbano*, a coarse cloak, called in the south of France still a *gaban*, which is identical with *cabane*, as though a cloak were a portable *hut* for shelter.—*Cape* is the Italian *cappa*, and this from the Latin *cap-ere*, (*quia hominem capit*). *Escape* is to rush off, divested of your *cape* i.e. your cloak.—Our very English-sounding word *buckram* is Italian. It is properly *bucherame*, and suggests the *interstices* visible in the actual material, being an immediate derivative of *bucherare*, to perforate. The buck-basket in which Falstaff was concealed had its name from a cognate word *bucato*, properly the *lye* used in washing linen, then the linen itself. *Fustian*, another sound of rough English ring, is also Italian, viz., *fustagno*, fabric of Fostât in Egypt. Again: *canvas*, prior to French handling, is *cannavacchio*, from *cannabis* Latin and Greek, hemp.—*Serge*, is Italian *sargia*, late Latin *sarica*, i.e. *serica*, silken. It is implied that the material consists of a mix-

tnre of woollen and silk.—In *bawdekin*, an old English word for a rich embroidered stuff used in the manufacture of copes and portable canopies, we have preserved *baldacchino*, properly fabric of Baldacco, i. e. Bagdad. *Baldacchino* now, as tourists know, is the permanent canopy over the principal altar in an Italian church.—Our soft word *velvet* is the Italian *velluto*, derived from Latin *villutus*, suggestive of the *villi*, or hair-like filaments which constitute the surface of velvet.—*Tassel* we take from *tassello*, but we develope from it a sense somewhat of our own. It denotes in Italian a peg (Latin *taxillus*). There is perhaps a reference to the little wooden forms which sometimes constitute the interior of tassels and other ornamental pendants of silk. *Laccia* (from Latin *laqueus* noose) gives us *lace* in shoe-lace &c, and *latchet*. *Galoschia* we make *galosh*. It is properly *Gallica*, a Gallic shoe, a term employed by Cicero. (Phil. 2. 30, 76)—*Traps* and *trappings* (as in horse-trappings) *may* come from *drappe*, Italian *clothes*.—In colours, Italian has helped us to *bay* from *baio*, (whence also *bajoccho*, from the colour of the coin); *brown*, so far as *brown*-study is concerned, from *broncio* morose look; *crimson* and *cramoisie* (from *carmesino*, and this from *kermez*, Arab., the cochineal insect;) *carmine* is from the same root; *lake* [and lacquer] (fro ʾacca, Persian, lâk); *maroon* (from *marrone*, the chesnut); *sorrel* (from *sauro* connected with a Teutonic root denoting to dry up or *sear*); *yellow* (from *giallo*, i.e., if we do not ourselves also get it from the Teutonic *gelo*). Dyed in *grain* is properly in *scarlet*, from *grana*, Italian, a scarlet berry; late Latin *grana*, L. *granum*. Hence Italian *granata*, *granate* or *garnet* stone, and Spanish pome-*granate*. *Cornelian* is from Italian *corniola*,—from *cornu*, referring to the nail—as ὄνυξ, *onyx*-stone.

Italian lies hid in several English words which relate to cooking and eating, to viands and condiments. *Kitchen*, to begin with, is the Italian *cucina*, Latin *coquina*, root *coqu*-,cook). The Anglo-Saxon *cycene* was learned from the monasteries. The celebrated *Cokaygne* was properly *Cuccagna*, a Utopia of kitchen-stuff and good things generally. (*Macaroon* and *macaroni* are reported to be connected with *macaria* blessedness.) *To dine* (intermediately, of course, from the French *diner*) is the Italian *desinare*, which has been derived from "Dignare," the first word of a "Grace before Meat."—*Banquet* is *banchetto* and refers strictly to the arrangement of the tables and *benches*, for the guests. The root of the Italian is, how-

ever, Teutonic.—*Leccare*, lit. to lick, has produced the French *lécher*, which, through *relécher*, has begot for us *relish*. *Leccare* itself is again from a Teutonic root.—*Salsa* gives us and the French, *sauce*, which ought to be *sause*. In *sausage* we recover this *s*.—In *mustard* we seem to shew at once our Italian predilection and our etymological knowledge, *mostarda*, the original word, having reference to the *must* or grape-juice with which it appears to have been usual to mix this well-known condiment. As in other instances, the accessory has here usurped the place of the principal notion, which, of course, was not the *must*, but the farina of the *Sinapis nigra* or *alba*.

We have preferred the French *tarte* in tart. The Italian original, viz., *torte*, has more meaning in it, from its allusion to the twisted ornaments often seen about such comestibles. *Torquere* also furnished the root-idea of *to truss*, Italian *torciare*.—In Romeo and Juliet we have (i. 5,) "Good thou, save me a piece of *Marchpane*." This is the Italian *Marzapane*, which is the late Latin *Marcipanis*, or *panis Martius*. *Marci panis* might refer to the first maker of the cake so called, as, in English, S. Lunn; or to a distinguished patron of such an article of food, as Abernethy. *Panis Mortius*, on the other hand, might be something especially prepared for New Year's Day, *Martius*, March, being originally the first month in the year. Others see in *marza*, *maza* (whence our maize), derived from *massein* to knead. The thing itself appears to have been a macaroon.—*Fromage* is a French error for *formage*, the Italian *formaggio*, having reference to the *forms* or shapes into which cheese is pressed. Our *artichoke* is the Italian *articiocco*, which in its turn is the Arabic *al-ardi-shauki*, the thistle of the Earth. The Englishman who first suggested *choke* for the foreign, unintelligible termination -ciocco (pron. chiocco) probably had much internal satisfaction.—*Prune* is *brugna*, from *Broniolacum* (*Brignolles*) in Provence, celebrated for its plums. *Dattero*, Italian for *date*, retains more evidently than the latter word does, a vestige of its derivation from *dactylus*, descriptive of the finger-like form of the fruit of the date-palm. In addition to *spice*, *spezie*—in Italian—signifies all *species* of drugs. The apothecary is a *speziale*.—In this connexion we may venture to give the origin of *treacle*, Italianicè *teriaca*. It is properly an electuary, a specific in cases of bites from venomous beasts (*theres*).

Here are some names of utensils, implements, and appliances for various purposes. *Pitcher* is *bicchiere*, which has given us *beaker*

also.—*Flagon* is (1) the old French *flacon*, and this for *flascon*, which is (2) from the Italian *fiasco*, deduced from the Latin *vasculum*. (*Flask* is the same word.) *Adze* is *azza*. *Dagger* is *daga*, both from root *dag* i.e. *dig*. *Mace* is due to the Italian *maccare*, to bruise. *Pommel* is *pomello*, dim. of *pomo*, apple. *Boss* is *bozza*, a rough, unformed block of stone, whence also *botch*. *Billiard* is *biglia*. *Cable* is *cappio*, properly the loop or knot on the rope. *Hawser* hails from *alzare* to hoist, (*altus*). *Buoy* is *boja*, strictly the rope or chain to which the Float is attached. The singular term *cockboat*, with which is connected *coxswain*, is the Italian *cocca*, having the same meaning, derived from *concha* a shell. *Pinnace* in Italian is *pinaccia*, whose root *pinus* poetically signified "a ship." *Forge*, English and French, is *fabrica* the workshop; thus *fabrica*, *fabr'ca*, *faurca*, *forgia*. *Brasier* is *braciere*, from *bra-ce*, hot coals. *Match*, for igniting, is *miccia*, i. e. *myxa* a wick. *Spill*, for the same purpose, is *spillo* (*spinula* from its shape); whence the French *épingle*, pin. *Grate*, *grating*, is *grada*, *gradella*, from the Latin *crates*, *craticola*, whence *grille* in French, and *to grill* in English. *Scaffold* is *catafalco*, from *catar* to view (*captare* sc. *oculis*) and *balco* a stage or gallery. *Gibbet* is *giubetto*, properly *little doublet*, from *al-jubbah*, Arabic, which gives also the French *jupon*. A *mangle* is *mangano*, properly a *ballista* for hurling stones,—from its being worked somewhat as that machine was. *Callipers* or compasses are *calibro*, the bore of a cannon, (Arabic *câlib* pattern); the case in which we put them is *cassa*, i.e. *capsa*. *Model* is *modello*, Latin *modulus*, dim. of *modus*. *Palette* is dim. of *pala* (spade) whence the French *pelle*, and the English *peel*, an implement known to bakers. *Litter*, through the French *litière*, is *lettiare*, late Latin *lectaria=lectus*, couch. *Cushion* is *cuscino* from *culcitinum*, dim. of *culcita* Latin (feather-bed). (This *culcita* gives us also *quilt*.) And *culcita puncta* (qu. Marseilles quilt?), corrupted first by the French into *contre-pointe*, has been finally transformed by us into *counterpane*.

To express military ideas, we borrow *captain*, for example, from *capitano*. *Caput* (*chef*) produces also the old French *chevtaine*, the English *chieftain*. *Champion* is *campione*, one who takes the field (*campus*), in behalf of another. The *Cid Campeador* had his title from the same root-notion. *Scout* is Italian *ascolta*, *scolta*, connected with the Latin *auscultare* to listen, whence the French *écouter* also. A *sapper* is the noun of *zappare* to dig; and this from the Greek

ecaptein. To *mine* (the military sense of this word is the primary one) is the Italian *minare,* whence *mineral.* *Minare* gave rise rather curiously to *menare* (French *mener*), to conduct or lead, (whence *mien* and *demeanour*). Drovers are wont to work their herds along through the streets and highways chiefly by *threats* (*minæ*).—A *casemate* is the Italian *casa-matta,* of which the origin is disputed, some contending for *casa matta,* a hastily constructed hut; others for the Greek *chasmata.* *Platoon,* through the French *peloton,* a ball, and figuratively a small detachment of soldiers,—whence *pellet* and even *pelt* —has its rise in the Italian *pilotta,* which is the late Latin *pilotellus,* a dim. of *pila* a *ball.* *Duel* is *duello;* and like the Italian, by a mistaken reference to *duo,* has acquired the notion of "a combat between two." It is simply *duellum,* the archaic form of *bellum,* as *duis* for *bis.* *Carbine* is the Italian *carabina,* transformed from *calabrino,* deduced from a late Latin word *cadabula,* conjectured to be the Greek *catabol-e,* a machine for hurling stones. Firearms, in some instances, retained the names of the engines of war in use before the application of gunpowder to military purposes.—*Salet* a helmet, as well as *salade,* the French for the same, is properly the Italian *celata,* which is the Latin *caelata,* sc. *cassis,* i.e. a helmet ornamented with figures in relief. *Alarm* and *alert* are the Italian military cries *all' ar-me* to arms! and *all-er-ta* up! stand erect! (*erigere*). To *escort* is *scorgere,* i.e. the Latin *ex-corrigere* to conduct forth. To *scamper* is the Italian *scampare,* i.e. Latin *ex-campare,* to quit the field. *Tourney* and *tournament* are *torneo* and *torneamento,* and have reference to the equestrian *evolutions* to be seen at such spectacles.—Here *ambassador* may be noticed. We have adopted almost without change the grand Italian *ambasciadore.* This is (first) from the late Latin *ambaxia,* which (secondly) appears to come from the Teutonic word *ambactus* used by Cæsar (deBell. Gal. 6. 15.) for vassal or servant. Webster, in endeavouring to force us to spell it with an *e,* is, as so often, wrong.

In relation to money, we have *finance* itself, Italian *finanza,* that which puts a *finis* to a transaction by paying a stipulated sum. A similar idea is conveyed by *pay.* It is in Italian *pagare,* that is to say, *pacare* to establish peace by the delivery of a sum of money. *Quittance,* even, is derived from *cheto,* which is properly *quieto,* Latin *quietus.* *Acheter* to buy, in French, is the Italian *acchatare,* which is the Latin *ad captare,* to take to oneself, to appropriate by the payment of a price. To *bargain* is Italian *bargagnare,* for which the late

Latin is *barcaniare*, to traffic in or from a *barca* or *barge*, the boat "quae cuncta navis commercia ad litus portat." To *change*, ex change, is *cambiare*, *cangiare*, from a Latin verb *cambire* to barter. *Rent* is from *rendere*, in Latin *reddere*. Pittance is *pietanza*, a monk's daily allowance. *Purse* is *borsa*, i.e. *byrsa*, leather. *Budget* has the same signification, being *bolgea* Latinè *bulga*, a word introduced from Gaul. "*Bulgas* Galli sacculas scorteas appellant." Festus.—*Sequin*, generally attributed to *Cyzicus*, may be from the Italian *zecca* a mint, which is the Arabic *sikkah*, a stamp or die. *Piastre* is *piastra*, a thin plate of metal, but derived from *emplastrum* a surgical plaster. *Medal* is the Italian *medaglia*, from the Latin adj. *metallea*, sc. *pecunia*, whence the late Latin *medalia*, half a denarius. *Booth* is said to be *bottega*, one of the odd shapes that *apotheca* has assumed.

Most technical terms in Music introduced into English from the Italian remain unchanged. *Madrigal* is *madriga-le*, from the root *mandra*, a herd of cattle. *Spinet* is *spinetta*, an instrument struck with a *spina*, a plectrum or quill. *Banjo* is *pandora*, Spanish *bandurria*, Latin *pandura*, "a musical instrument of three strings, invented by Pan."

In Architecture, *dome* is the Italian *duomo*, properly speaking the *Domus*, the common Home of the Christian people of a city. The great cathedrals of Italy are generally, in imitation of St. Peter's, surmounted by a cupola. This, seen at a distance, is pointed out as the *duomo*. The whole building is intended; but strangers have chosen to conceive that the reference has been to the cupola only. *Gallery* is *galeria*, an apartment for *gala* days and festivities. *Jalousie*, for Venetian blind, behind which one may see and not be seen, is *gelosia* for *zelosia*. *Vault* is *volta*, i.e., *camera voluta*, from the arched roof. *Chimney* is *caminata*; properly *camera caminata*, a room provided with a *caminus* or fireplace. *Gaol* or *jail* is a softened form of *gabbiuola* a diminutive of *gabbia* or *gaggia*, i.e. the Latin *cavea*; whence also *cage*.

> "Velut ursus
> Objectos *caveae* valuit si frangere clathros,
> Indoctum doctumque fugat recitator acerbus."
> Hor., A. P., 472-4.

Cajole is cognate. *Grotesque* is *grottesco*, ornamentation after the style of that to be seen in the catacombs or *grottes*.

A variety of miscellaneous instances of disguised Italian in English

might be noticed. E. g. *To re-member*, Italian *membrare* from the Latin *memorare*. To *commence*, Italian *cominciare*, late Latin *comin' tiare*. To *defy*, Italian *disfidare*, properly to disclaim, to renounce confidence in (*fides*). To *search*, Italian *cercare*, Latin *circare*, to look *about* for (*circum*). To *baffle*, through the French *beffler*, Italian *beffare*, to jeer, over-reach. To *inure*, from Italian *uria*; contraction of *auguria*, whence, by misapprehension, *heur* also, in French, in the words *bonheur*, *malheur*. To *impeach*, Italian *impacciare*, to hinder, arrest, implicate, a strengthened form of the Latin *impingere*. (*Dispatch*, Italian *despacciare*, is the opposite term.) To *plunge* (through the French *plonger*), Italian *plombare*, Latin *plumbicare*, to go down like *lead*. To *launch*, Italian, *lanciare*, to hurl. (Hence the well-known *élan* in French—for a "spring-forward" or "dash.")

To *repose*, Italian *riposare*, i.e. *repausare* late Latin, as on an inscription *Pausat in pace*. To *muse*, and *amuse*, (the latter sometimes assigned to *à musis* "away from study",) Italian *musare* to stand *a-gape*; (to *a-muse* is to set *a-gape*), from *muso* (Lat. *morsus*), the muzzle or mouth. To *caulk* (a ship, &c.), Italian *calafatare*, corrupted from the Latin *calefectare*, the reference probably being to the *hot* melted pitch used in paying the seams. To *calk* (a horse, &c.), connected with Italian, *calcare* to press with the foot (*calx*). To *anneal*, Italian *niellare*, literally to *make black* (*nigellus*). *Coy*, through the old French *coit*, is the Italian *cheto*, which we have already seen to be *quieto*. (From *coit* comes *coiser*, whence we have *cosy*, i.e. *coisé*.) *Quaint* is *conto*, contracted for *cognito*, known, familiar, homely. *Acquaint-ance* involves the same word. *Entire* is *intero*, Italian for *integro*. A *jewel* is the Italian *giojello*, derived from *gaudium*, a joy or delight. *A fair*, a special time for trading, is *fiera*, which is the Latin *feria*, the *feriae* or festivals determining the times of the *fairs*. *Curate* is *curato*. *Parrot* is *parrocchetto*, i.e. "little priest," being the diminutive of *parochus*, the curé of the *parish*. This bird was a favorite pet of the solitary ecclesiastic of the olden time. *Juggler* is *giocolaro*, Latin *jocularius*. *Usher* is *usciere*, Lat. *ostiarius* (doorkeeper). *Fetish* is *fattizio*, a *factitious* object of veneration. A *jay* is *gaio* from the gaiety of its colours. A *clove* has its name from *chiovo*, which in Italian is a *nail*, Latinè *clavus*. The whole expression is *chiovo di girofano*, i.e. *clavus caryophylli*. *Curtain* is *cortina* from *chors* an enclosure, a place curtained off. *Plot*, in such a compound as *grass-plot*, is the Italian *piota*, sward pleasant to the *foot* of man

and beast. *Piota*, in modern Italian, denotes only the foot of a beast. In very ancient Italian, in Umbrian, for example, *plotus*, i.e. *plautus*, "flat-footed" was applied to man.

(*To be continued.*)

REVIEWS.

Lectures on the Elements of Comparative Anatomy. By Thomas Henry Huxley, F.R.S., Professor of Natural History, Royal School of Mines, and Professor of Comparative Anatomy and Physiology to the Royal College of Surgeons of England. *On the Classification of Animals, and on the Vertebrate skull.* London: John Churchill & Sons, New Burlington Street. 1864.

We have no intention either of analysing or criticising at length this important work, which we could not be satisfied without bringing under the notice of such of our readers as are interested in physiological or natural history pursuits. The name of Thomas Henry Huxley assures us of sound knowledge, original research, profound thought, complete command of the literature of the subject, foreign as well as British, and a clear, lively, straightforward style in the communication of his ideas. No work of his can fail to be deserving of attention, and he has here entered on a very wide and most interesting field, of his labours upon which the volume before us affords but a preliminary specimen. We are far from admitting the correctness of all his arguments or from receiving all his conclusions, and it would take much more time and space than we can command to discuss to any purpose what may be called in question. But when we most differ from him we appreciate his high qualities and strongly recommend to every inquirer the study of the work now before us, as well as of his other contributions to science.

It is, perhaps, hardly with strict propriety that Professor Huxley's work, consisting of lectures delivered before an audience as learned in this department as could be assembled, and specially treating the most doubtful and disputed questions which the science affords, is entitled, "*Elements* of Comparative Anatomy." The work is as far

from giving the introductory views and general statements expected in an elementary work, and adapted for beginners, as it is from being an arranged statement of full details on the various branches of the proposed subject. It seems rather to be a collection of treatises on obscure or much disputed points of the science in which the author examines the different opinions maintained, and endeavours controversially to establish his own views. We by no means object to the plan pursued. We feel sure that the advanced student of comparative anatomy and physiology will read the lectures with deep interest and great profit, but if the title should lead any one to expect an elementary treatise, it must occasion disappointment.

Professor Huxley's general doctrine of classification is not one from which we could anticipate the best results. He is disposed to favour *a* classification—one among many possible ones, instead of seeking *the* classification which truly expresses the relations really existing among the several parts of the animal kingdom; and relying for his purpose on a few definite characters, he expects every included object exactly to conform to a precise definition, whilst we believe that every truly natural assemblage of objects is marked by a group of characters all of them manifest in the more typical forms but in deviative examples gradually fading out, so that one fails here another there, though on the whole the object must be referred to that and no other division. We cannot recognise strongly marked dividing lines as occurring in nature, and we are persuaded that exacting strict conformity to a precise structural definition must of necessity make any principle of classification worthless for its best purposes. In the important portion of his work which relates to the vertebrate skull, we find Professor Huxley opposing himself to the theory, now very generally received of the vertebrate composition of the skull. This theory in itself antecedently probable, and supported by facts which he himself sufficiently states, seems to us to have fallen into disfavour with our author, because it has been ably supported and illustrated by Professor Owen. The malignity, for we can use no milder term, manifested in these lectures, as elsewhere, against this profound comparative anatomist and great naturalist, is the most objectionable feature of Professor Huxley's work. It is lamentable to see such men as these carrying personal enmity to such extremes. It calls for the grave censure of such as feel that the study of nature ought to lead to harmony and friendly feeling amongst all its votaries, and that if the

pursuit of truth necessarily produces alienation of feeling and bitterness of condemnation, the gem is hardly worth the cost at which it must be obtained. W. H.

Observations on the Terrestrial Pulmonifera of Maine, including a Catalogue of all the species of terrestrial and fluviatile Mollusca known to inhabit the State. By Edward S. Morse. Portland, 1864.

This little work, though separately offered for sale, is an article extracted from the Journal of the Portland Society of Natural History for March, 1864. It is at the same time a useful contribution to local natural history, and contains valuable structural observations relating especially to the buccal plate and the lingual membrane, illustrated by many well executed figures, rendering it exceedingly interesting and useful to every student of the land and fresh water Mollusca. How far the author is right in considering the differences in the figure and markings of the buccal plate, and in the comparative number of plates in a row on the lingual ribbon as generic and family characters, we shall not now attempt to determine, nor have we formed a distinct opinion on the subject; but there can be no question that such characters have great value in their proper place, and that the observation of them increases our knowledge of the animals and our interest in studying them. If some of these variations were to be ultimately regarded as only affording sectional characters within a natural genus, and as demanding less multiplicity of names, they would still lose none of their interest with the careful student, and such a statement and illustration of them as is given in this work of Professor Morse must be deservedly held in very high estimation. We shall look with much interest for his promised paper on the classification of the Pulmonifera, in which he will give his reasons for the arrangement he has adopted. One thing is obvious—that the necessity for very numerous names greatly increases the risk of the introduction of barbarous or improperly constructed ones, and of the use of the same names in different branches of natural science, an abuse not to be endured; and it becomes all original investigators who may have to select names to be very cautious lest they should burden science with names which cannot be retained. We do not at this

moment recollect whether the name Isthmia was first given to a genus of Diatomaceæ or to the section of Pulmonifera to which our author applies it, but most clearly it cannot stand in both situations, and we believe the Diatomaceous genus is the one to be received. The work before us is too much occupied with specific details to afford matter for quotation, but the following passage will interest all who are engaged in studying Pulmoniferous Mollusca, and will give a good idea of the author's mode of viewing the subject:

"In the Helicidæ, (as restricted here to those animals which sustain a globose or planospiral shell) we have noticed thus far three principal types of lingual dentition.

"(1.) In those larger forms of Helices which we include under the sub-family Helicinæ, we have in the lingual membrane about one hundred rows of plates, with about seventy-five plates in a row. The laterals and uncini are scarcely distinguishable one from the other; in fact they may be said to blend together. The centrals and laterals are unidentate and similar in form; the uncini either unidentate, bidentate, or irregularly notched. The buccal plate is solid, arcuate, its frontal portion strongly marked with longitudinal ribs which crenulate the cutting edge.

"(2.) I another group which we designate as Helicellinæ, we have the viscera protected by a thin, glabrous shell; the lingual membrane is nearly as broad as long, having about sixty-eight rows of plates, averaging about forty-two plates in a row; the laterals and uncini are quite distinct; the central plate broad, long, tridentate; the laterals, three to five, bidentate, identical with central, in form of denticles; the uncini unidentate, the denticle being aculeate and re-curved. The buccal plate is thin and crescent shaped, with a middle beak-like projection, lateral terminations pointed.

"(3.) In a still smaller group, for which we propose the sub-family name of Valloninæ, we have the lingual membrane composed of eighty or ninety rows or plates, averaging twenty-six plates in a row. The laterals and uncini are generally distinct. The central plate is square, tridentate; the laterals four to five, square, bidentate; uncini broad, short, and minutely serrated. The buccal plate is slightly arcuate, rarely produced centrally; its front surface marked with delicate perpendicular or diverging striæ, faintly notching the cutting edge; the lateral terminations of plate being rounded or blunt.

"These three types of lingual dentition are accompanied with like

peculiarities in the character of the shell, the external appearance of the animal, and the general size of the species.

"Vitrininæ I restrict to Vitrina, owing to the value I place on the external characters of the animal. Punctinæ I hold good on the extraordinary character of the lingual dentition and buccal plate peculiar to the species on which this sub-family is based. The other groups we have not considered sufficiently to offer any opinions as to their relative value or position. Taking the number of plates in a row from five different species in each group from Pupinæ upward, and averaging this number for each group, we have the following result:

Limacidæ including Philomycenidæ,	94
Helicinæ,	73
Helicellinæ,	42
Valloninæ,	26
Pupinæ,	24

THE LATE PROFESSOR BOOLE.

The scientific world deplores the, to our narrow view, premature loss of one whose genius, acquirements and character caused him to be held in the highest estimation: Professor George Boole, of Queen's College, Cork. We copy from a local paper a tribute to his memory which many will peruse with a melancholy interest:—

"The intelligence of the death of Dr. Boole, Professor of Mathematics at the Queen's College, Cork, which it is our melancholy duty to announce, will be received with regret not alone by his friends and acquaintances, but in all the learned bodies of Europe. His vast genius and profound and versatile acquirements extended his fame beyond the limits of these islands, and made his name "familiar as a household word" in all the great scientific assemblies of the Continent. The extensive renown which the name of the deceased obtained, was the result entirely of his vast natural ability and devoted application to scientific studies. He was self-taught in the proper sense of the term. Living secluded in Lincoln where he was born, avoiding the pleasures of society, and disregarding the allurements which often prevent the cultivation of genius, the solitary student occupied his time in elaborate researches into the hidden laws of nature, which he only varied by occasional lonely rambles amongst the verdant hedgerows, where his enquiries into her inner mysteries were exchanged only for reflections on the beauty of her external manifestations. He never studied under a tutor, and the enormous mass of profound and accurate information with which his mind was stored, as well as the high degree of cultivation which his intellect exhibited, were the result of his own private and unaided application. Although he attained so lofty a rank amongst the great mathematicians of the age, he did not confine himself to the study of mathematics alone. He was so well read in classics that he was better qualified for a professorship

in them than many who have devoted their attention exclusively to the ancient languages of Greece and Rome. He was also well acquainted with modern European languages, and was lately engaged in translating some mathematical works from the German. His rare ability was first perceived upon his communicating to the Royal Society, when only 22 years of age, a mathematical paper in which he carried his investigations on portions of the differential calculus to such length, and with such astonishing analytical powers, as to merit the society's gold medal. The subsequent years of his life were passed in the same manner, and he continued to prosecute his studies with the most devoted ardour, "far from the bustling haunts of men." The University of Dublin presented him with the degree of Doctor of Laws. The University of Oxford in similar recognition of his acquirements and ability, conferred on him the degree of Doctor of Civil Law. He was elected a Fellow of the Royal Society of England, and the French Academy of Science honoured him by putting his name on their roll, with the intention of electing him one of the few foreigners who are corresponding members of that learned and select body. The recent demise of Struve, the great Russian mathematician, created a vacancy in that august conclave which Dr. Boole was to fill; but this unexpected death deprives him of the enjoyment of that distinction. On his appointment to the professorship of mathematics in the Queen's College here, it was freely acknowledged by the most competent authorities that the government had sent us the ablest scholar in the kingdom, and that in the Universities of Oxford, Cambridge or Dublin, an equal to George Boole could not be found. He was the inventor of a very ingenious system of mathematical notation, and in addition to his "Outlines of the Laws of Thought," and "treatise on differential equations," was late engaged in the preparation of another work on Mathematical Science. Although the deceased was of a very retiring disposition and avoided company, his genial good nature and warm-hearted generosity, as well as his high moral principle, made him esteemed and beloved by all who had an opportunity of forming even the most casual acquaintance with him. In proof of this we need only mention, that when a special meeting of our Local Gas Company was called to give the shareholders the benefit of ten instead of eight per cent. Professor Boole, at much inconvenience attended, and spoke earnestly against the proposed breach of faith. Although he was then only one of five dissentients, he has had the satisfaction of seeing recognised and established the principle of justice which he then advocated to his own pecuniary disadvantage. He devoted himself with zeal to the instruction of the students attending his lectures, and from his lucid manner, was most successful in conveying to their minds clear and distinct ideas of the intricate considerations which the subjects involved. His regard for the students did not terminate with their attendance in his lecture room, for his warm-hearted benevolence made him take an interest in their subsequent career. He was guileless and simple as a child, tender and affectionate as a woman, and in the full sense of the expression, an honest man. Those who enjoyed the rare opportunity of studying the higher mathematics under his guidance, feel that they have suffered an irreparable loss, and that so lofty and at the same time so gentle a mind is rarely met with."

THEODORE II. AND THE NEW EMPIRE OF ABYSSINIA.

THE YOUTH AND ACCESSION OF THEODORE.

(*Translated from the Revue des deux Mondes, Nov.*, 1864.)

I.

Since the adventurous journey of Bruce, more precise notions have replaced, among us, the old world fables which made of the empire of the Négus* something as unknown and mysterious as the District of Monomatapa. This result, is due, chiefly, to certain narratives, in books welcomed with generally deserved favour in France, England, and Germany. This movement towards publicity, however, has been arrested during the last twelve or fifteen years, a thing much to be regretted, since it is precisely within that period that Abyssinia has made its first serious effort at political and social reorganization. So much the less should this attempt be allowed to pass unnoticed, as it is, perhaps, the only endeavour of its kind, attempted by a declining people in taking as a model, not European modern civilization, but that which it formerly possessed. Whatever may be the final issue of this bold experiment, it will not, perhaps, be uninteresting to become acquainted with its phases and, above all, to study the strange man who presides over it, and whose name has for two years begun to be familiar to us.

The traveller who coasts along the African shore of the Red Sea, and who, since leaving Suez, has had nothing before his eyes but downs and little dun hills, unconnected and monotonous, on approaching the coral islet of Massaona, sees, defined against the horizon, a long and lofty wall, over which, as sentinels, tower three or four peaks, ordinarily hidden in the clouds. This is the most advanced slope of an immense table land, two hundred leagues in breadth by a length still undetermined; and this plateau, rising to an average height of 8000 feet above the level of the sea, is the whole of Abyssinia. Never have the boundaries of a state been defined by nature with a more inflexible hand. The plateau, which possesses the mean temperature of central Europe, and where hardly a twentieth part of the soil remains uncultivated, is composed of arable lands rivalling in

* This word of the Amharic language, which may be translated *King of Kings*, is principally employed to designate the sovereign of Abyssinia.

fertility those of Flanders and the Ukraine, watered by two great rivers and two hundred rivulets or permanent streams which, skilfully economized, everywhere sustain vegetation and life. At the foot of the mountains, a yellow, bare, stony and undulating plain, covered with gum trees and other thorny shrubs, extends to the sea, its sands and dry beds of torrents, where some thousands of nomads seek for scanty pasture and waters, not unfrequently brackish. The burning air breathed in these regions is fatal to the Abyssinians, who there meet the dreaded nefas, the deadly fever of the low-lying grounds: on this account, they do not appear, for ages, to have made any lasting establishment upon it. It is true that the same physical cause which forbids their conquest of Soudon has always been their protection against their Mahommedan neighbours of the Nile or the Red Sea.

The Abyssinian race is not more African than the country it inhabits. In features, mind, qualities, and defects, and, above all, in perfectibility, this people is allied to the Caucasian race, and that, unquestionably, closer than the Hindoos or the Persians. In this relationshship lies a series of mysteries, which I content myself with pointing out to the true lovers of ethnological problems. All else is obscure in the origin of this nation, which religious prejudices have led to give itself a Hebrew derivation, that critical history does not accept. The first home of indigenous civilization was Axum in the province of Tigre, a name extended by degrees to all Abyssinia east of the river Takazze. The establishment of Christianity, of communication with the Greeks of Alexandria, and even with the Roman empire itself, the conquest of Arabia Felix, all date from this brilliant period of the Axumite kings, still powerful at the time of the Crusades. The removal of the capital to Gondar, a little later, marked the decline of the Tigrëens and the supremacy assumed by the Amharas, a strong, hardy, and warlike race who appear to have come from the south, in the region about the equator, and who assimilated to themselves the religion, manners, civilization, and, to a certain extent, the language of the subjugated people. At the present time, the recollections of this conquest are, happily, effaced—thanks to the necessity in which the Abyssinian people found themselves of vigorous concentration, in order to resist the great Mahommedan states which attacked their country upon the east and west, and the hordes of heathen and savage Gallas who overspread it upon the south.

Abyssinnia is divided into thirty provinces, generally having, in official documents, the pompous title of kingdoms, a title that facts ceased to justify fifteen centuries ago. Those most frequently mentioned in books and the narratives of travellers are, commencing at the Red Sea, Hamazene, Agame and Chire, fine, fruitful districts, inhabited by an industrious and peaceful population; Semen, which the Germans call the Alps of Africa, and which merits this name by its snowy summits over 16,000 feet high; Dembea, a rich and populous plain, washed by a beautiful lake, two hundred miles in circumference, and in which geology discovers an immense volcanic crater; Beghemder, Godjam, Damot and Choa, fertile and smiling regions, where provincial rivalries maintain a perpetual flame of civil war; finally Lasta and Koura, mountainous and picturesque countries, peopled by a poor and proud peasantry whom sceptical good sense has preserved from the fruitless agitations of their neighbours. All these form a whole of about 4,500,000 inhabitants scattered through nearly 6000 villages.

The normal government is an hereditary monarchy, restricted by a feudal oligarchy which in turn finds itself limited by the strong and liberal organization which the commons enjoy, thanks to their numerous country gentlemen (*balagoult*, feudaries). It is in every respect the political mechanism of Hungary and Poland down to a very recent period, and of Russia till the time of the Czar Boris the first, who established serfdom. Abyssinia has never had a middle class. The merchants (neggadé) form a class knowing no other bond of union than that of commerce, isolating themselves from public affairs, and inhabiting a small number of towns such as Gondar, a broken down place of 10,000 souls, at most, and the centre of learning and theology; Adona, its rival, a modern and commercial city, the capital of Tigre and five leagues from Axum, which is no more than a vast monastery; Koarata, a charming little town standing upon a projecting point of Lake Tana; Ankober, Madhera-Mariam, Derita, and Emfras, each with a population of hardly 4000 souls. We may also mention, by way of curiosity, the town of Azazo near Gondar, built round a famous monastery, and inhabited by an aristocracy of literate merchants who divide their attention, equally between business and theology. As to the clergy in Abyssinia, it does not form a distinct political body. The constitution, which grants it great immunities within the church, outside of its pale,

places it on a level with the ·anest citizens. Its members are moral, studious, and comparatively honourable, whatever Bruce and others may have said to the contrary. Neither does the army form a separate class or permanent force: every *balegoult* owes military service in proportion to the importance of his fief and for a fixed time, as was the case with our feudatories of the middle ages. There is, nevertheless, in the Empire of the *Negus* a floating population of from 60 to 80,000 men who make a trade of war; but this body has no more influence upon general politics than formerly the lansquenets and free lances had among us. It may therefore be said definitely, that the ruling class in Abyssinia, during orderly times, is the rural population, represented by more than 80,000 country gentlemen, and, during revolutionary periods, by the confederate aristocracy which seizes upon the power by a bold stroke nearly always ephemeral.

French travellers who have visited Abyssinia, during the last thirty years, from Messrs. Combes and Tamsier down to the Messrs. d'Abbadie, have seen it, after convulsions which have occupied a century, arrive at a condition, identical, in more than one respect, to that from which France emerged eleven hundred years ago, by the powerful hand of the Carlovingian kings. A dynasty of princes without power, surrounded with mock homage, and tossed about by all the caprices of a half-feudal, half-pretorian oligarchy: civil war in permanent possession; the church alone standing, yet already invaded by barbarism and the spirit of violence; are what in France succeeded to the sons of Clovis, and in Abyssinia to the Davids, the Claudiuses, and the Fasilides. The annals of ancient Abyssinia have often occupied the attention of travellers and historians; but they have always neglected to study the more intimate history of this monarchy, grafted upon an ancient civilization that to us now seems barbarous. Half-Cæsars and half-pontiffs, their crown adorned with a triple row of diamonds and surmounted by a mitre bearing a cross, the old *Negus* lived under tents, without any fixed residence, and consequently without any fixed capital, surrounded by an army ever ready to maintain the integrity of too vast an empire. The name of Prester John, given to the *Negus*, by the first Europeans who saw them during the Crusades, well expresses the strange, half-fabulous character which, more than once, exercised the imaginations of our forefathers. The emperor, who three centuries

ago first substituted for this kind of knight errantry a clumsy imitation of the Western Kingdoms, unconsciously prepared the way for the degeneracy of his race, and for the disaffection of a people delighting in war. The imperial family, however, might still have preserved, for a long time, its prestige, founded upon the national and religious traditions of the country, if one of the last *Negus* had not conceived the fatal idea of surrounding himself with foreign mercenaries, whom the great vassals, uniting, expelled after a sanguinary struggle. In this contest, the feudal lords learned to appreciate their power. Their most daring chief, the *ras* Mikael, whose dramatic story Bruce has given in detail, did not shrink from regicide. This crime, soon avenged by a coalition of his rivals who deprived him of power and liberty, served, however, as a lesson to his conquerors, who employed no other tactics than that of isolating the sovereign from the nation, dooming him to a life of idleness divided between pleasure and frivolous studies. They succeeded thus, in two or three generations, in creating a line of phantom kings who still exist, adored by the clergy, despised by the nobility, and scorned by the warlike chiefs who seize upon the power, not even doing them the honour to consider them dangerous. A traveller who passed through Gondar, twenty-five years ago, found the legitimate emperor of Abyssinia reduced to the manufacture of pelisses, in order to live. Another European since then, crossing one of the ruined suburbs, lying alongside the deserted palace of the *Negus*, met a young lad about twelve years old, poorly clad, but proud even in his poverty. He asked him his name. "My baptismal name, replied the child, "is Ouelda-Salassie (son of the Trinity); I am *Negus nagast* (King of kings). He, also, was a scion of this dynasty of lawful Abyssinian princes, long since stricken with irremedial moral decline.

Two or three men have attempted of late to reconstitute the power invested in a single ruler, which can alone save the unfortunate Abyssinian people. About 1830, there arose, in the Eastern provinces, a certain Sabhogadis who became, in reality, king of Tigre, and in whom was realized the type of such a perfect prince as the native mind loves and understands, being brave, pious, liberal, and improvident. When a savage confederacy overwhelmed him at the battle of Mai-Islamai, in February, 1831, his heroic death was the occasion of general lamentation. "Ah!" says a still popular song,

"will they be blessed who have eaten corn watered by such blood?" In the struggles which followed the death of Sabhogadis, the violent gave way, little by little, to the skilful, and, remarkable among the latter became the famous Oubie, long known in Europe from the narratives of travellers whom, while bearing towards them the deepest hatred, he exerted himself to please and entertain. The life of Oubie is an unconnected romance, commencing from his very birth. He was the child of a caprice of *dedjas* Hailo,* a young prince whom a rainstorm had surprised while hunting, and obliged to pass some hours in the house of a beautiful widow of Djanamora. The family of dedjas Hailo bore a close resemblance to that of Richard, Cœur de Lion, in which "fate condemned the fathers to hate their sons, and the sons, their fathers." The bastard Oubie, disowned by his father, at the death of that parent, succeeded in ejecting his brothers, scattered his uncles, and either fought in detail or brought into cleverly laid ambush, the brilliant and rash native feudal lords. About 1840, he exercised actual royal authority, from the environs of Massaona to the gates of Gondar. Two men, alone, stood out against him, *ras* or high constable Ali, master of Gondar and the central provinces, and *dedjas* Gocho, a great baron, almost unassailable among the mountains of Godjam. Oubie had a manifest superiority over these two men. He had an object, that of replacing the degenerate dynasty, lingering in the great deserted halls of the palace of Gondar, and of restoring the line of warlike and conquering *Negus*, who, for three centuries past, had been but an ironical memorial to the present. As a formality indispensable to his coronation, he had made sure of the interested concurrence of the *abouna* or head of the national church, and, strong in this support, he went to give battle to *ras* Ali before his own residence of Deora Tabor.

This battle, fought in 1841, might pass for a comedy had not human blood flowed in it. The ras, seeing his cavalry routed at the very first charge, galloped away, and was only discovered a fortnight later, hidden in a monastery among the mountains of Lasta. Three of his generals, thinking all was lost, went to the tent of Oubie in order to give up their arms. They found him in a senseless state of intoxication, and taking advantage of his condition, bound him and carried

* The titles of *dedjas* (duke), *ras* (high constable), are placed, without an article, before the name of the person, as in the case of the English *lord*, and the Spanish *don*.

him off, along with the *abouna*. Ras Ali, to whom the bold stroke of the three generals had thus restored the victory, exhibited, upon this occasion, the indolent generosity which characterized him. Preferring to deal with a vassal, who promised gratitude and fidelity, to fighting, successively, the great barons who, at the point of the lance were disputing for the states of Oubie, he restored to the latter his liberty, of which he made a use easily foreseen. After having divided, deceived, and beaten the barons in succession, the bastard, stronger than ever, re-opened the campaign against ras Ali (1847). This campaign was confined to a series of marches among the Alps of Semen, in the midst of severe cold, which contributed much towards rendering it inoffensive; it was only marked by skirmishes of secondary interest, in which appeared with distinction a young leader of a band called Kassa, the heir of a great name, but in whom the two parties were far from detecting the man destined to restore the Ethiopian empire upon the bloody ruins of feudalism.

Kassa Kuaranya, now Theodore the second, was born, about 1818, at Cherghie, chief town of the mountainous province of Kuara, governed by his father and uncle, the *dedjaz* Haïlo Mariam and Konfon. Haïlo Mariam was of noble origin; as to the mother of Kassa, a very doubtful rumour, accredited by the ity of her son, since his accession to the throne, would make her descend from the legitimate imperial family, that which native history connects with Solomon through Menilek, son of the beautiful Makada, queen of Saba. History has preserved no particulars of Haïlo Mariam; Konfon, on the contrary, was the most distinguished chief of the western frontier of Abyssinia, open to Egyptian incursions. It was he who deprived the Musselmans of the province of Gallabat, and, in 1838, cut to pieces, at the battle of Abon-Qualambo, the Egyptian regulars of Mahomet-Ali. The native poets have celebrated this battle in a song, commencing thus:—

"The sabre of Konfon was black, and behold it has taken the colour of the (red) caps of the Turks..."

Also, when Konfou died, his sister composed a requiem, still popular in the whole of Abyssinia:—

"*Ye tallako amora kenfou* tessabara.....*
Broken are the wings of the great eagle,
That swept from Metamma to Sennaar..."

* There is here a pun upon *Kenfou* (wings) and *Konfou*, the name of the hero. Arab taste is in this respect, transmitted to the Abyssinian.

The death of Haïlo-Mariam followed close upon that of Konfou. Greedy kinsmen seized upon his estate; his widow, plundered and unaided found herself reduced, to sell *kousso*, a medicinal plant, in the streets of Gondar; and young Kassa was sent to the monastery of Schanker, near Lake Tana, with the prospect of one day becoming one of the too numerous learned men or *debteras* of Abyssinia. This asylum, however, was not destined to be thus fatal to him: *dedjas* Maro, one of the great vassals, who disputed for the empire, fell upon the monastery of Schanker, after a defeat, deluged it with blood and, thus cowardly, revenged himself upon the children for the humiliation to which their father had subjected him. Kassa escaped the massacre, and, favoured by night, took refuge in the family of his uncle.

The three sons of Konfou, at their father's death, knew no better than to dispute with their lances, the right of inheritance, until the arrival of the powerful dedjas Gocho, prince of Godjam, set them at one again, by conquering the province on his own account. Kassa, who had taken the side of the eldest of Konfou's sons, took refuge in the mild and secluded district of Sarago, in the house of a peasant, whose hospitality he shared for more than a month. Upon leaving his retreat, we find him at the head of a handful of highwaymen, stopping the road from Gallabut, in company with another bandit. He already showed himself superior to the vulgar adventurers among whom he lived, and an attempt that he made to establish a certain discipline among them, gave rise to a conspiracy that young Kassa, being apprized of, by the faithful among them, repressed with severity.

Tired of this existence, unworthy of him, and, strengthened by the junction of some of those bands with which civil war had filled Abyssinia, Kassa set his mind, thenceforward, upon making a political position for himself; and resolved to dispute with Menene, the mother of the ras Ali before-mentioned the province of Dembea. Menene is a remarkable figure in the contemporaay history of Africa. The daughter of a great Mahommedan lord of the Galla country, she had married the reigning *Negus* for ambition; and had not been more faithful to him than are the great Abyssinian ladies in general. She commanded her troops in person, governed her fief of Dembea with vigour, and was not very unpopular, since, though haughty enough, she was not cruel. What seems to have troubled her most, was the thought that she and her son ras Ali were only upstarts in the midst of a

royalist, ceremonial, and christian Abyssinia. She willingly surrounded herself with priests and scholars, and ras Ali founded and endowed many churches; but their orthodoxy was hardly credited—a fact which contributed greatly to their downfall. Being notified of the designs of the son of Haïlo, Menene sent against Kassa, at first, but a small army which gave way at the first shock. Menene, then taken at unawares, found she could not do better than offer the conqueror the province of Dembea under her sovereignty, and the hand of her grand-daughter, Tzootsedje. Kassa made no hesitation about accepting both offers.

He was then young, adventurous, and fanatical. Thus he only followed his natural inclination in undertaking a campaign against the Egyptians, who, favoured by the troubles of Kuara, had re-conquered Gallabat. He made his first raid against the capital of the latter province, the town of Metamma, where was held a weekly market very generally resorted to: he attacked the place on the market day, and departed laden with booty. This successful achievement brought about him every young vagabond in Gondar that could hold a lance and shield, and, followed by this motley crowd, more embarrassing than useful, he fell in, on the banks of the river Rahad, with two companies of good Egyptian infantry, strongly intrenched in a *zerilsa* or enclosure of thorns, and commanded by a certain Saleh Bey, a fat, inefficient officer, who had the good sense to conceal himself behind a simple captain named Elias-Effendi, an experienced and modest man who saved everything. The Abyssinians came on like a whirlwind; but, stopped short by the hedge, they had to make a halt and attempt to remove the thorns while the fire of the Egyptians swept them away at close quarters. To these volleys was added the discharge of two field pieces, so much the more dreaded by the Abyssinians on account of their want of acquaintance with cannon. Their firmness, however, under this regular and murderous discharge, and their battle-cries, made the Turkish soldiers waver; and they would most certainly have given way without the example of their officers. Kassa, from his open tent, was a spectator of this butchery, when a Turkish bullet broke the shoulder of one of his relatives, and cut the stake of his tent which fell upon him. He immediately put a stop to the useless massacre, and retired, leaving hundreds of dead upon the spot, and the enemy astounded at the savage valour of his soldiers. "They came to the cannon's mouth,"

said Saleh-Bey to me, some time afterwards, "like mosquitoes to a candle."

Humiliated and wounded himself with a bullet, Kassa, in some hours, made a march of fifty miles, and met upon the frontier an Italian lazarist, Father Biancheri in quest of proselytes. In the disordered state of his mind, he asked him point blank: "Are you the friend or the enemy of our father the *Abouna?*" "I am the friend of all christians;" replied the priest evasively. Kassa then informed him of his disaster, and said to him: "These Turks are not braver than we; but they have the discipline of the Franks. You are a Frank: will you teach my men?" "I am not a soldier;" replied M. Biancheri, with embarrassment; "I am only a poor wanderer for Jesus Christ." And thereupon they parted.

In his retreat, Kassa caused to be brought to him one of the *azmari* or jugglers, who practise medicine in Abyssinia, in order to extract the ball lodged in his wound. The *azmari* refused to take the matter in hand till he received a fat cow and a *gombo* of mead. The wounded man, destitute for the time of everything, sent to Menene for these. But the vindictive princess, delighted with the misfortune of her former conqueror, and profiting by it, only sent him a quarter of beef, adding that a whole cow was too fine a present for a man like him. Kassa dissimulated his rage; but hardly was recovered of his wound than, mounting his horse, and followed by his faithful soldiers, he took the road to Gondar, resolved to chastise Menene. The troops of the sovereign who tried to stop him at Tchako, were thoroughly beaten, and, among the prisoners, was found dedjas Oundesad, an arrogant chief who had promised to bring to Menene the son of the *kousso*-vender, living or dead.

The chief prisoners were invited to the banquet which was given, according to custom, after the battle. Among them was Ounderad who felt far from sure as to the results of the festivities, when he found himself placed at a bare table, and had put into his hand a *berrille* or Abyssinian flagon of antique form, filled with a black looking liquid, while the officers of Kassa ate with savage gusto, and drained mirth from flasks of excellent mead. Kassa, who presided over the banquet, turned towards the conquered, and said to them with courtesy: "My friends, I am, as you have said, only the son of a poor vender of *kousso*; and this reminds me that my mother has sold nothing to-day. I have thought you would not refuse me when

I ask you to do honour to her wares; and, if it be not very appetizing, accept my excuses therefor." And he forced them, trembling and happy to get off so easily, to drink, to the dregs, flagons of this abominable purgative.

This was followed by a new engagement, in which Menene fought in person, and, wounded by a lance-thrust, fell into the power of Kassa. Ras Ali then besieged, in the heart of winter, the mountain which served for a stronghold to Oubie; he left the siege, and came in person to ask from the young conqueror the peace that he had refused to Menene, and to the solicitations of Amara Konfou, one of the shrewdest diplomatists of the country. Kassa consented to treat, kept Gondar, released Menene, and, according to national usage, gave his own mother as a guarantee of good faith. Kassa was then in the condition of a half-rebel, which he could only maintain by force of audacity. In his position of ras and master of the capital, the young chief did not fear to exact tribute from the powerful prince Gocho, dedjas, and, almost, king of all the country surrounded by the river Alsai in its vast upper curve. Gocho, brave, liberal, and a friend of Europeans, was the truest type of the *mokonnen*, or Abyssinian nobleman; and, consequently, without more mind and foresight than his fellows. Surprised and exasperated at this insolence, he collected a good army, obtained from Ras Ali the investiture of the conquests he was about to make, arrived upon the Dembea, and succeeded in sweeping away the little army of Kassa who took refuge in the low grounds (*kolla*) of his native province where he lived, for a year, upon roots and wild fruits, while the conqueror installed himself in Gondar (1852). What most affected Kassa was, that Gocho had found and plundered the pits which he had filled with his favourite provisions, the *chimbera*, or Abyssinia pea. However, in October of the same year, he again took the field at the head of a small army that he had disciplined by means of some Egyptian fusileers, prisoners or deserters, after the expedition of Gallabat. He boldly offered battle to the powerful army of Gocho near Djenda, on the north-west point of Lake Tana, and was overthrown at the first charge. His men were taken or trodden down by the cavalry: he himself took refuge, with fifteen followers, in a field of maize, where he placed them in ambush just as Gocho came upon him at the gallop, and cried to his men in the excitement of victory: "Secure this *kollenya*, this vagabond of the lowlands!" Hardly had Gocho

spoken, when he fell stone dead: the *kollenya*, an excellent marksman, had pierced his forehead with a ball. Issuing from his ambush, he ran to the corpse, stripped it of the bloody doublet, and holding it up before the astounded horsemen, called out: "Your master is dead; and what do you mean to do now?" Gocho's men, so far, had had the advantage; but the death of their chief demoralized them, as is always the case in the east: the greater number laid down their arms, while others resisting, by their destruction, but added to the glory of the conqueror.

Alarmed at such a success, ras Ali sent against Kassa the best of his generals, Aligaz Faras, reinforced by auxiliaries that Oubie, already fearing for himself, decided to send him under the command of two *fit-aurari*, or generals of the advance guard. Fate was as unpropitious to them as to Gocho: they were completely beaten, and Faras was killed. Ras Ali then invaded Dembea in person. The opposing armies met at Aichal. That of ras Ali was the finest; but he lacked confidence. The chief, brave enough himself, had alienated the affection of his troops by surrounding himself with scholars and astrologers. When the charge sounded, the soldiers said ironically: "Let the *debteras* (scholars) go to the front!" They did their duty, however, as well as ras Ali. But Kassa having said to his marksmen: "Aim at the silken doublets!" that is to say, upon the gilded group of officers who surrounded the ras, the staff was dispersed at the first volley, and the defeat was a complete one. Kassa pursued the defeated enemy beyond the Blue Nile, and gained over ras Ali a second victory, this time decisive. "It is God who strikes me," said the ras, with resignation, "and not Kassa." He took refuge in the ghedem or asylum of Madhera-Mariam, and thence gained the mountainous province of Lasta, which was his native country, renouncing, at least provisionally, both the contest and his authority.

In spite of these victories, the country beyond the Nile was not subdued. It still remained in arms under Beurrow Gocho, the son of Gocho, a young warrior, brave, haughty, violent, and fanatical. In ras Ali's last contest, Beurrou had offered to come and fight by his side against his father's murderer; but at a council of war held by the ras, some leaders, irritated by the pride of Beurrou, cried out: "Does this man think himself indispensable? Are there not others as brave as he?" Ras Ali had the weakness to listen to them; and declined an offer which might have saved him. In fact, a great part

of Kassa's prestige depended on his personal valour, and this advantage Beurrou might easily have disputed with him. The young chief, irritated, retired to his inaccessible rock (*amba*) of Djibsela, and awaited the attack, which, for any one who knew the conqueror, it was not difficult to foresee. The latter, in fact, soon showed himself. Beurrou, immediately changing his tactics, quitted the *amba*, leaving his wife in command, and descended to the plain, commencing a war of skirmishes, about which Kassa did not give himself a moment's anxiety. He surrounded the *amba*, and brought to the foot of the fortress the brother of the lady castellan, notifying her that her brother's life depended upon her submission. Kassa had a thorough knowledge of the ideas of his country, and was well aware that conjujal affection would give way before ties of blood; moreover, the lady had before been taken from a loved husband, and forcibly married to Beurrou. She surrendered Djibsela, merely stipulating that she should not be given up to Beurrou and should see him no more. After having pillaged Djibsela and the surrounding country, Kassa set out in pursuit of his enemy, overtook him and offered battle. But the soldiers of Beurrou laid down their arms, and their chief, discouraged, did the same. Thereupon a whimsical scene took place that one might imagine was an imitation of that between the Black Prince and King John, had Kassa been a scholar. He invited Beurrou to sup with him, treating him with respectful courtesy, calling him *my lord* (*ieneta*), and offering him to drink with his own hands. The dream was a short one, and the awaking sudden. At the end of the repast, Beurrou was put in irons, and sent to the state prison of Sar-Amba (1854).

All central Abyssinia was subdued. All that remained in opposition to the fortunate son of Haïlo Mariam was old Oubie, in his vice-royalty of Tigre, and it would hardly be to know Kassa to think that he was the man to stop half-way. Did he, from that period, think of the divine mission that later he attributed to himself, and which has been the mainspring of all his actions during the best years of his reign? This I do not know: at any rate, he mentioned it to nobody. With the cunning viceroy the struggle was about to enter upon a train of negociation and diplomatic perfidy, for the right understanding of which we must refer to an earlier period and a higher theme.

II.

It is well known that, for more than fourteen centuries, the Abyssinian people have professed an oriental Catholic form of worship, into which, the interruption of communications with the rest of Christendom, has allowed many superstitions of a Coptic and Judaic character to enter, which have deceived travellers as to the real origin of this religion. The invasion of Egypt by the Mahommedans, in making of the church of Alexandria (from which that of Abyssinia hierarchically arose) an oppressed church, degenerate and barbarous, had the most disastrous influence upon the Upper Nile. Since the *abouna* or head of the Abyssinian church must, canonically, receive his investiture at the hands of the Patriarch of Alexandria, and, since the great regulator of the Abyssinian church, in the eleventh century, Saint Thekla Haimanot, had decided that the *abouna* should always be a foreigner,—probably in order to avoid nepotism on the part of the great feudal families,—there resulted therefrom a state of affairs easily forescen. The Abyssinian clergy, generally learned and curious in theological studies, who would certainly have invented scholasticism had it not already existed, found themselves subordinated to ignorant and haughty monks from dismal Coptic monasteries where fifty years ago they still prepared eunuchs for Mahommedan harems. The Danubian principalities have had for one hundred and fifty years, their political phanariots; Abyssinia had, for seven centuries, its religious phanariots, quite as dangerous, nevertheless; for they completely stunted intellectual progress, then quite possible on the banks of the Nile, especially in theology, legislation, and national history. The Portuguese, who saved the Ethiopian monarchy in the sixteenth century, brought the Jesuits in their train, who by dint of pride, unskilfulness, and bloody follies, lost the finest position imaginable. The nation rose against them and against the imoecile and ferocious king whom they had moulded in every feature to cement their tyranny; and it is to the remembrance of this, still an object of horror to the Abyssinians, that we must attribute their distrust of Europeans, and, above all, of the missionaries who have visited them for thirty-five years.

Protestantism had taken the initiative, about 1830, and sent to Gondar the Rev. Samuel Gobat, a Swiss missionary, since called to the bishopric of Jerusalem. It grieves me to speak severely of a man whose good intentions and personal morality are beyond all suspi-

cion ; but never has a traveller seen Abyssinia in a more false light than M. Gobat. He was capable and devoted, but vain and credulous, in fact, the last man in the world to influence the most deceitful and *Byzantyne* people of the East. Three years he traversed the country, preaching and disputing with the *debteras* and priests who, for a few glasses of *tedj* (mead), made him all possible concessions, and loaded him with hyperbolical eulogies that he has registered in his journal with incredible simplicity. He left the country, persuaded that he had sown the seed in excellent soil; and the Protestant society of Missions, wondering, sent to Tigre the Moravian brethren who, like missionaries in general, were men personally honourable ; but, for all that, blundering sectaries. The Moravians thought to exhibit apostolic boldness in declaring a coarse and brutal warfare against all traditions of Abyssinian worship, whether good or bad. Thus on a solemn fast day they killed a cow, the flesh of which they distributed gratuitously to every comer, looking upon it as a great triumph to have brought some poor people to sacrifice their conscientious scruples to gluttony. Their violent language with regard to the worship of the Virgin and saints, and above all a cynical remark upon the Virgin, brought down upon them the hatred of the Tigreens and Oubie, the official champion of the national religion, did a very popular act in expelling them from Abyssinia.

The propaganda of Rome had not waited for this last moment to attempt sending a mission to Abyssinia. In 1838 they had sent them a Capuchin monk, a jovial, easy and bold man, lettered withal, and capable of standing up in argument with the most subtle of the *debteras;* but the mission was not constituted till towards 1840, on the arrival of the Roman Catholic Bishop of Abyssinia, Mgr. de Jacobis, of a noble Neapolitan family, one of the most eminent of our contemporary missions. Mgr. de Jacobis brought into Abyssinia the true spirit of the church militant, invincible energy, indulgent and conciliating piety, and irreproachable morals. His enlightened charity extended from Christians to Mahommedans, in this country more fanatical than elsewhere. To the present day, the latter never speak of *abouna Yakoub* (Mgr. de Jacobis) without giving him the title of *kedous* (holy). The old sheik of Embirami, a kind of marabout, who exercises regal authority over a circle of more than fifty leagues around Massaona, replied to his disciples who reproached him for going on foot in spite of his great age: "What!

kedous Yakoub who is nearer God than I am, greater than me, and born in luxury, goes on foot from Massaona to the country of the Bojos, and shall I disdain to make an hour's journey without my mule?" Oubie, before whom all Tigre trembled, humbly dismounted when passing the door of Mgr. de Jacobis.

This apostle had only one defect: he believed more in the efficacy of diplomatic manœuvring than in that of evangelical teaching, as a propagandist. He commenced in Abyssinia with a grave error: he wished to give a turn to matters which it would have been more worthy of him to break with altogether. The patriarchal seat was vacant. Oubie, who aimed at being crowned *Negus*, announced that he would be at the expense of an embassy entrusted with the task of obtaining from Alexandria a new *abouna*, in the person of a young Copt of Minie, named Salama: but, being on bad terms with Egypt, he did not know who to send with any hope of success. He applied then to Mgr. de Jacobis, and begged him to go himself—he, appointed *abouna* by Rome—to bring his rival. Mgr. de Jacobis accepted this strange proposition without hesitation. He said to himself that, whatever action he took, a new *abouna* would nevertheless arrive; and that it was better to gain his sympathy, or, at least, his neutrality than to make himself an enemy.

Salama, the present patriarch of Ethiopia, is one of the worst specimens of the Coptic clergy. Proud, violent, greedy and quarrelsome, he divides his time between usury, intrigue and commerce. And such commerce! He carries on the slave trade, removes the sacred vessels from the churches, and sends them by bales to Egypt: one of these packages was seized and confiscated about ten years ago at Djeddah by the French consul, M. Rochet d'Hericourt. The morals of Salama are in such bad repute that, one day, his confessor, Father Joseph, revealed, in a crowded public place at Gondar, his latest confession, and informed the faithful that the Patriarch had nine mistresses, of whom two were nuns. His ignorance is proverbial; and the *memhirs* (professors of theology) maliciously submit to him questions beyond his ability to solve, from which he extricates himself by excommunicating the questioners. Since the accession of Theodore the Second, Salama has conspired ten times against him. The most diverse judgments are passed as to his religious faith: most think him a protestant, since at Cairo he was a pupil at the protestant school of M. Lieder, and since the British consulate at that city

was no stranger to his appointment. This man, who thinks of nothing but money and sensual indulgence, is the most fanatical promoter of religious persecution. Thus, hardly was he installed in Gondar than, finding himself unable to contend with the influence of the Catholic mission, he had recourse to Oubie for its expulsion. Oubie, who used forcible means much against his will, was obliged to remove Mgr. de Jacobis; but he allowed him to take a good position upon the frontier in the Catholic villages of Halaï, Alitiena, and in the province of Zenadegle.

We now understand why, in 1854, Kassa summoned Oubie to pay tribute, and send the *abouna* to him. These were two signs of spiritual and temporal submission that a man, as powerful as Oubie, could not grant at the first set-off. For twenty-two years he had exercised royal authority over a country as great as the present kingdom of Poland, and had commanded these Tigreens, who looked upon themselves rightly as the elder branch of the Abyssinian people, the central and southern population, the Amharas being, in their eyes only successful fighting barbarians. The success of the latter, I ought to state *en passant*, has been greatly owing to their disposition, riper and more solid than that of the Tigreens: they, witty, amiable, careless, and anachical are, to some extent, the Irishmen of the Nile region. The cunning old man, who had conquered Tigre with the help of his mountaineers of Semen, found himself in turn face to face with a younger and more engaging Amhara than himself and who, for this was a great affair, believed in "his star." The viceroy temporised. He sent money to Kassa and then, as negotiators, his son Goangoul and his general (*belatta*) Kokobie. A provisional treaty was signed, and, during the preliminaries, Kassa had no trouble in discovering in the *belatta* one of these "wise" men who swarm about falling thrones. They plotted together the perfidious design which they did not delay to carry into execution. In the meanwhile, the *abouna* came to Gondar from Adona, the capital of Tigre. Kassa only waited for this moment to take a more decided attitude: he advanced his claim to the throne of the *Negus* and summoned to Gondar the representatives of the armed nobility, of the churches, of the towns and villages to decide between Oubie and himself, under the direction of the *abouna*.

The chances in this decisive struggle between Kassa and Oubie were unequal enough. The former had the prestige of youth, vic-

tory and eloquence, three powerful qualities, anywhere, and irresistible in chivalrous and wordy Abyssinia. It is true that they had reason to mistrust the aptitude of this out-and-out soldier for the arts of peace, whilst Oubie had secured to Tigre twenty years of repose, under a hard and rapacious yet regular government, and one that protected both the peasant and the merchant. For a moment, the balance was in the hands of the *abouna*; and it was easy to see that he would make it lean, not towards a young upstart whom he began to fear, but towards Oubie whom he had always lorded it over. At this conjuncture, it was known that Mgr. de Jacobis had arrived at Gondar—for his mischance with the *abouna* had not cured him of his tendency to make political manœuvres subservient to religious matters. On this occasion, however, he obtained, for an instant, a prospect of the realization of his hopes. Kassa, who clearly discerned his position, entered into communication with the Italian bishop, and promised, if elected, to recognise him as *abouna* of the Abyssinia church. Kassa was too much attached to the national church to make this proposition in good faith; but Mgr. de Jacobis might easily have been deceived thereby, since, from the point of view of the constitution of the Abyssinia church, the Romish bishop would be at least, as legal as the Alexandrian. Salama, hearing of this began by excommunicating Kassa and all his adherents. And then he reflected that Kassa was, after all, an ambitious man who would not scruple at a religious revolution to gain the empire, and would give strong support to an Italian bishop, should he procure the throne for him. He was not deceived as to the respect which Mgr. de Jacobis' virtues inspired in the Abyssiaian people, nor as to the profound contempt into which he himself had fallen: his only hope was in military power. It was, therefore, necessary for him to play his cards well in the competition. He came to a determination at once; and sent a promise to Kassa to ensure his election, on condition that his first act as *Negus* would be to banish Mgr. de Jacobis and his coadjutors. The compact was concluded. Some days after, the Assembly proclaimed dedjaz Kassa *Negusnagast z'Aithiopiya*, King of kings of Ethiopia, and Mgr de Jacobis was conducted to the frontier, under escort, with all the regard due to his person and character.

Completely sold and mystified, Oubie, as might be expected, did not submit to his defeat, and soon appealed from it to the sword.

He still possessed a faithful army, commanded by his son Cheton, for whom he had no great affection, whom he humiliated as much as he could, probably because he saw in him a young fool whose warlike propensities might compromise the future success of his work. Cheton had formed two squadrons of picked men, one of which wore the white *lemde*, a kind of sheep-skin scarf, and the other the black, and who had won under fire a reputation which it was their great aim to maintain. In a military point of view, therefore, Oubie was as strong as Kassa; but the latter had with him that course of events which in politics, irresistibly, and almost without effort, carries a man into power. Oubie had not, during a reign of over twenty years, displayed any of those qualities which, in a critical period, assure a prince of the enthusiastic and affectionate devotion of his subjects. He had sown duplicity, perjury and a vulgar and ignoble dread; now he was about to reap desertion and open treachery. The viceroy of Tigre had just re-entered Semen when his rival came up with him, after a tiresome march, in view of the plain of Dereskie, where was the line of the Tigreen army stretched over a great extent of ground. Kassa immediately ordered the attack. His troops replied by a general murmur of discontent; and the Negus, for a moment, was perplexed; but he quickly saw that hesitation could only compromise a victory that seemed sure to him. He passed down the lines of his army, addressed his men in brief and energetic language, recalled their former victories, and spoke disdainfully of the enemy. "Is it that impotent old man," said he, "who is to stop your path? Are you afraid of these muskets loaded with powder and rags? Shall these rocks and precipices hinder your courage? Follow me, and, by the will of God, I shall not call myself Kassa, to-morrow!"

The first charge of the Amharas was vigorously received by Oubie's fusileers, who made great breaches in their ranks. At the same time, brave Cheton, followed by his black and white squadrons, attacked with fury; and Oubie himself, in spite of his infirmities, set his soldiers an example of unlooked-for boldness. The battle was for a long time undecided; but at last, Cheton fell, severely wounded. Oubie had his leg run through with a lance in the hands of Kassa himself, and his general Kokobie, with his division, either went over to the enemy, or remained neutral (the fact has not yet been satisfactorily cleared up). The victory was complete. Oubie fell into the hands of the conqueror. Cheton, forgotten upon the

field of battle, dragged himself to the caverns which rise above the beautiful valleys of the Menna, and died there from the effects of his wound. When Kokobie came to receive the reward of his treason, he met with an unexpected reception: "I distrust a servant who sells his master," replied the Negus coldly; and Kokobie, placed in irons, was thrown into the prison of Tchelga, where he still remains.

The battle of Dereskie was fought on the 5th of February, 1855. Two days after, the victor caused himself to be crowned with great pomp, amid the applause of the army and clergy, in that very church of Dereskie which the vanquished of the other day had, in view of his own coronation, caused to be built and adorned under the direction of a European who had established himself in Abyssinia, Dr. Schimper, a naturalist well known in France. This mockery of fate was not one of the least of Oubie's troubles. Kassa assumed the name of Theodorus, which had been borne before him by a Negus that had reigned not without glory, towards the twelfth century. This name was, so to speak, the programme of his reign. A tradition, universally known in Abyssinia, and cited by nearly every traveller since Bruce, says, that a Negus, of the name of Theodore, should restore the Ethiopian empire to its ancient glory, destroy islamism, and free Jerusalem from the crescent:—a persistent and touching hope with which a people, borne down by oppression, tries to escape from its deceptions of the present. The new Negus picked up this name from the national legends, and affirmed with familiar boldness that he was the man of the prophecies. It is certain, that, in 1855, all Abyssinia believed it, even if it have not the same faith to-day. As for himself, was he then really convinced? This is a delicate question to which even, after having known him personally, I know not what to reply. I think, however, that he was sincere, and that, for many reasons too long for detail. This confidence inspired him with strangely ambitious projects. It was then that he proposed to the Czar, "his brother of Moscow," to combine a march upon Jerusalem, and divide the Mahommedan world; but it has also incited him in a more practical way to do great things, by which Abyssinia has profited.

There still remained the fragment of the party just subdued to be dealt with. The taking of the plateau of Amba-Hai completed the submission of Semen. Upon this height of about 13,000 feet, Oubie kept his treasures, 40,000 talaris, much gold and silver in

ingots, and seven thousand muskets, in the charge of one of his sons. The conqueror brought Oubie before the fortress, loaded with chains, and informed the young prince that the life of his father depended upon his submission. This unchivalrous retort had the expected effect, and the place capitulated. In Amba-Hai or a neighbouring citadel, the valiant Sobhigadis-Kassa, son of the prince of the same name who was killed in 1831 in the fight of Mai-Islamai, and the victim of signal treachery on the part of Oubie, had been confined for seventeen years. He ran the risk of only making a change of jailor, when his daughter, a very young and remarkably beautiful princess, boldly sought out the new negus and supplicated him for her father's liberty. Her filial affection, and still more her beauty, made a favourable impression upon the young conqueror, who gave Sobhigadis his liberty, and took the graceful suppliant for a favorite. The conquest of Tigre was accomplished: the negus gave this important vice-royalty to Balgada-Araca, a brilliant soldier without administrative capacity, and then, strong enough to dare everything, he put Oubie in fetters.

Theodore was then maturing a project dear to the patriotism of every Abyssinian—that of commencing a crusade against the Turks, masters of the lowlands that had formerly belonged to Abyssinia. His southern troubles did not leave him time to act. In the group of mountains which separate Choa from the rest of the empire, there lived a Mahommedan people of foreign race, the Ouollos, an advanced colony of that powerful Galla stock, which, for three centuries, beating upon the frontiers of Ethiopia like a raging ocean, has already half devoured it. A confederation of independent chiefs, of whom the most powerful were then Oarhet, princess of Worra, and Adara-Bille, lord of Tehuladere; the Ouollos had stirred up the legitimate wrath of the Abyssinian Christians; they were to a certain extent the free lances of Africa, lending to the highest bidder their formidable cavalry, and adding to the horrors of civil war the severity of their fanatical hatred towards the Christians. Theodore the Second, who had had to do with these ferocious mercenaries, had sworn forever to prevent them from drenching the Christian provinces with blood, and they had the impudence to provoke him at the very moment of his most brilliant triumph. He learned that the Ouollos, led by the princess Oarhet, had overstepped the abrupt slopes of the Bachilo river, and had ravaged the Christian provinces,

and, in these, especially the churches. Theodore marched against them. Oarbet retired, and the negus, taking as the base of his operations the left bank of the Bachilo, set himself to conquer the whole land of the Ouollos. They, commanded by Adara-Bille, bravely offered battle to the negus, and were cut to pieces; their chief was left upon the field, and the prisoners were maimed without mercy. The survivors relinquished the contest in the open plain and retired to the mountains, leaving the victor to pillage the level country, and carry away thousands of captives, whom he distributed among his soldiers. The negus then selected, for winter quarters, the post of Magdala, impregnable by Abyssinians, upon the left bank of the Bachilo: he made it at once his arsenal and chief state prison, and accumulated there thousands of muskets, which, thanks to long inaction and improper handling, are, to-day, nearly, useless.

Theodore, although victorious, had lost the greater part of his army, and for the present relinquished his designs upon the Ouollos. Another design occupied him altogether elsewhere. The narrations of our countrymen, Rochet d'Hericourt and of Major Harris have made known to us the kingdom of Choa, founded a century and a half ago by a fortunate chief, who took advantage of the negus' feeble government to dismember the empire and form a dynasty upon the extreme south-eastern frontier. The military policy of Theodore the Second required that this branch, broken off by revolution, should return to the parent stem, and circumstances were favourable for its accomplishment. Death had seized upon Tahle-Talassie, a sagacious prince, although hardly the African Solomon of whom more recent travellers speak. His son, Melchot, was far from inheriting his political sagacity, or rather a sly good nature that concealed an energy which the vassals took good care not to come in opposition to. Theodore marched from Magdala upon Aukober, the capital of Choa, and Melchot came against him with a numerous and well-disciplined army. Upon the night preceding the battle, Melchot died suddenly. It were easy to make strange conjectures upon this opportune death; but what proves Theodore beyond the suspicion of poisoning, is that no word of it has been breathed in a country so distrustful as Abyssinia. The nobles, filled with consternation, met in council. They all agreed, above everything else, to support the independence of their little state, to fight at all hazards, and, in order to prevent the discouraging impression of this event

upon the *morale* of the soldiers, to hide it from them. Accordingly, the next morning, the Choas marched valiantly against the enemy, preceded by a closed litter supposed to shelter the person of the suffering king; they fought admirably, but ended by being routed. Theodore followed up this victory with a rapidity to which the Abyssinians were not accustomed; he scaled the formidable position of Aukober, built on the summit of a sugar loaf, which wild goats find it hard to climb, annexed the kingdom to his empire, put a small number of influential chiefs in irons, had the policy not to irritate the inferior nobility, to whom he left their offices and commands, annulled the treaties concluded by Tahle-Talassie with England and France, and triumphantly pointed upon Deora-Tabor the English and French cannon found at Aukober. He had not yet left the country when he received the news that the faction of Beurrou was still stirring in Godjam. He flew there with the rapidity of lightning, and caused torrents of blood to flow. A woman was burned alive for the sole reason that she was the mother or wife of one of the insurgent chiefs. These executions, however, did not root out the spirit of local independence which reigned in these distant provinces. One year after the departure of Theodore, Tedla-Guatu, the young chief to whose care he had confided Godjam, declared himself independent and refused tribute.

At this same time (July, 1855), another more serious insurrection arose in Tigre, where the family of Oubie had still many partizans. The young sons of Oubie, not daring to risk the life of their captive father by rising openly, had cast their eyes upon an old companion in arms of Theodore, who, since the battle of Dereskie, had retired to the mountains of Sernen—Agan Negoussie.* When proclaimed negus, Negoussie appeared irresolute, and for some time refused the honour; semi-violence was necessary to make him ascend the *alga*, or in other words, the throne. Having taken this decisive step he was compelled to act, and either to gain or crush the neighbouring undecided chiefs. Negoussie marched against them, defeated them, and made a solemn entry into Gondar, where he was received (August, 1855) by the *debteras*, already annoyed at the reforming proclivities of Theodore the Second. Thence he marched upon Tigre, where the Theodorist party had fortified itself under the direction of the viceroy Balgaduatroca. The brother of the latter

* *Agan*, the name of the native county of Negoussie.

fell, near Haouzene, in a bloody battle, in which Negoussie was at the same time wounded and the victor. All the surrounding provinces at once proclaimed the pretender. Revolt was everywhere victorious; but it was at that very time that it received its check. All looks were now turned towards Gondar, which Theodore had just re-entered, and greedily they questioned the mystery still enveloping the policy of the new reign.

III.

The first acts of Negus Theodore the Second were marked by a practical good sense, and a moderation which singularly contrast with his present conduct. If, however, at the very moment when the bells of Dereskie announced his accession to the throne of the Davids and the Fasilides, he had thrown a look at the past, and thought of the still recent period of his proscription and misery, one might easily understand that his head would have been turned. Yet never was it sounder than at that critical moment, and the course that he followed during four years, well justifies the infatuation of which he was, at first, the object on the part of some Europeans. His idea was a very simple one. He wished to regenerate Abyssinia, and to draw the elements of this regeneration from its ancient civilization. This idea, at bottom chimerical, was very seductive to the enormous national pride of the Abyssinians, and did not expose the Negus to the same resistance as that which forced the Czar Peter and Sultan Mahmoud to inaugurate their reforms with bloodshed.

Abyssinia, even at the period of its greatest declension, offers to the eyes of the unprejudiced traveller, the principal strata of a tolerably advanced social order. The feudal system exists there but not more powerfully than in England; the institutions are very democratic, the machinery of administration simple, the code is that of Justinian with some modifications, rendered necessary by the genius of the people, property is well defined, individual rights are guaranteed by the right of appeal to the emperor, family relations are secure, commerce is protected, and the vengeance of the state and the atrocities of war are neutralised by the inviolability of numerous *ghedem* (asylums). The law is good and futile in itself: it is the fault of barbarism, brought about by endless anarchy, if the nobility is contentious and plundering, the church avaricious, justice venal, marriage annulled by the contagious example of the aristocracy,

and the right of asylum, and of caravans sometimes violated, all that was necessary, according to the victor of Dureskie, was to return to the ancient royal code (*tarika nagast*), and apply it with unsparing vigour.

The cares of Theodore, in the early part of his reign, were divided between judicial and religious reform. The chief necessity of Abyssinia was the security of the roads and of the rural districts in general, infested, in every part, by plundering bands. A royal proclamation, dated from the camp of Ambadjara, near Gondar (August, 1855), ordered "that every one should return to the profession of his father, the tradesman to his shop, the peasant to his plough." The edict was executed with Draconian rigour; and things, otherwise impossible in Abyssinia, began to shew themselves. The people of Tisbha, incorrigible bandits, whose village occupies a counter-fort of the mountain of Ifag, came to the camp of Theodore, armed to the teeth, and demanded from the Negus the confirmation of their right to exercise the profession of their fathers, recognised by David the Great. "What is this profession?" asked the Negus without distrust. "Highway robbers," they replied insolently. "Now listen to me," said Theodore, surprised, yet calm, "your profession is a perilous one, and agriculture is more profitable. Come down to the plain and cultivate it: the Lamghe is the finest land in the empire. I will give you oxen and ploughs myself." They were immovable. The Negus ending by saying, "Yes," and sent them away. While returning, proud, as they thought, of having intimidated the sovereign, they were joined on the road by a squadron of cavalry, the leader of which clearly proved to them, that if David the Great had authorized them by charter to live upon the highways, there was a decree of one greater, the holy king Lalibela, who authorized the police to cut down all robbers. Thus, not one remained, and, for my part, I was not annoyed in the least when I came to make a stay in Tisbha, in January and in May, 1863.

The judicature was very depraved. There was at Gondar a kind of supreme court, that of the twelve *likuouent** for the preservation of the code, which was co-extensive with the imperial authority. Several traits of jocular venality are recorded of it, as that of *lik* Asgo, who, having accepted a pot of honey from the plaintiff, and a mule from his adversary, and then, having favoured the latter, replied

* Plural of *lik*, judge.

to the complaints of the former: "What do you want, my friend? your pot has been broken by a kick from a mule!" The Negus had tact enough not to break the law with regard to these audacious perverters of justice, and to receive their resignation from themselves. In a matter in which he was personally interested, he assembled the *likuouent*, and laying the question before them, asked what the code decided. "Sire," replied the judges, "the code is your majesty." He took them at their word, and suppressed their jurisdiction, leaving them an honorary life, title and annuity, and substituting himself in their place as a court of appeal for the whole empire. In view of the quibbling character of the Abyssinian people, such a labour would have frightened any other than this indefatigable worker. I have personally been in a position to judge of Theodore's great activity, as attested by other travellers. After a prolonged vigil, the Negus would take three or four hours of sleep, interrupted, from two o'clock in the morning, by the numerous pleaders who came to take their places, uttering a cry which represents the *Naro* of the Normans: *Djan-ho, âjan-ho, djan-hoï!* (majesty! majesty!). The suits commenced almost immediately, and were, sometimes, not over till ten o'clock. A square composed of officers, soldiers, and suitors, awaiting their turn, formed the audience. This expeditious open-air justice, has been one of the principal causes of the popularity of the Negus: it was severe in great matters, jocular in small. One day a peasant was pleading against the *tcheka* (mayor) of his village, who had called him *donkoro* (blockhead), an injury provided for in the code. "You must pay the fine," said the Negus to the mayor;" "there should be no blockheads in my realm." Another day, they brought him a soldier who had murdered two merchants upon the road. "What did you kill them for?" asked the Negus. "Because I was hungry." "But could you not, at least, only have taken from them what was necessary, and spared their lives?" "If I had not killed them," replied the soldier innocently, "they would have defended their property." The emperor, exasperated at this ingenuous remark, had both his hands cut off: had them served upon a plate, and said to him: "Ah, you were hungry? Well! eat!"

This Draconian system had immediate effects. The roads, up to that time drenched with gore by robbery and civil war, now became as secure as those of France and Germany. An inhabitant of Djenda informed me, that the year before, not a single market day passed in

the village without an assassination: under the new reign, not a single murder has transpired, either in the borough or its suburbs. One must read travels taken in Abyssinia, from 1830 to 1845, in order to appreciate the benefit of a security obtained in so short a time, and the vigour of the hand which has brought it about. For my own part, I remember being ten times benighted at a distance of from two and a half to four miles from my residence, in company with a single servant, unarmed like myself, and never has the idea entered my mind that I could run the shadow of a danger. Certainly on Ethiopian territory I had not been as tranquil.

It was not the public roads alone that called for the establishment of order; society no less required it. An unbridled feudal system, in spite of the laws, had nearly suppressed marriage; it had become the fashion to replace the religious ceremony by a civil bond, broken by the first caprice. All the great barons had, around the legal *sicoro*, the matron treated with dissembled respect, haughty, indolent, and deserted, a staff of pert, pretty faced servants, dividing their not very rigorous affection between their all-powerful master and the dissipated young fellows who encumbered the ante-rooms. It was a harem without the name. Powerless to check such a course, the negus did at least some good, first in setting an example, and afterwards by making a decree obliging all officers and soldiers to have but one wife.

The most dangerous work to attempt was religious reform. The friends of absolute classification have not hesitated to declare the Abyssinian Church heretical and Eutychian. The truth is that Abyssinian Christianity is Catholicism, but a barbarous description of it; Eutychianism is but an opinion, by no means officially recognized, and, like others, subject to dispute; and Abyssinia is only separated from the Romish Church by insignificant questions, which Rome was the first to turn to account. The Abyssinians received Christianity in the fourth century from the Church of Alexandria, with which they remained closely connected. In order still more to confirm this union, the ecclesiastical constitution, promulgated by the famous Saint Thekla Vaïmanot in the twelfth century, decreed that the *abouna*, or Abyssinian archbishop, should always be a foreigner, a Copt, nominated by the patriarch of Alexandria. The same constitution gave to the Church two-thirds of the crown lands, an enormous and burdensome property, which was augmented by the numerous gifts of the negus and of the more pious *balagoult* (nobles; feudal

lords). All the abuses of mortmain weighed heavily upon the peasants, tenants of the Church, which had become grasping and rapacious, while they were not compensated for it by the inviolability which these privileged lands enjoyed in time of war. The negus brought the iron hand of a victorious leveller to bear upon this sacred institution: after a violent philippic against the vices of the clergy, he declared mortmain an iniquity and a national evil, and made all the church lands pass into the crown domain, securing a revenue for the deserving, leaving to the abbeys ground enough to support their inhabitants, and to the *abouna* some fine possessions, as Addi-Aboun, near Adoua, in Tigre, and Djenda, in Dembea. The people looked upon this reform with considerable favour; but in all conspiracies and after revolts Theodore discovered without much astonishment the mysterious hand of the *abouna* and the numerous body of which he was the head.

The peculiarity of absolutism is a love of the *see-sawing* order of politics presenting alternate rise and fall. To the *abouna*, whom he stripped and yet feared, Theodore, a little against his inclination, had granted the proscription of Roman Catholicism. Personally, he sympathized with Mgr. de Jacobis; but in matters of religion he professes the opinion of Louis XIV., that a well governed state should have but one faith, that of its sovereign. Hardly had Mgr. de Jacobis been escorted back to the frontier, than a strong body of cavalry fell upon the peaceful village of Alitiena, near Halaï, the retreat of the Italian Bishop; their intention was to sack the church and expel the priests; the peasantry defended their pastors at the price of their blood, for one of them was killed and several wounded. All these impolitic severities were a sad inauguration for the new reign, and religious correspondence, marked with irritation, often pushed to the length of injustice, announced to Europe the restorer of Ethiopia as a second Diocletian. I have known the negus well enough to be persuaded that he listened to no reasons but those of state, and that fanaticism was not an element in these outrages. He felt, however, that they might injure his European reputation, and, to guard against this, he addressed a letter to the English and French Ambassadors at Massaona in which he represented the measures taken against the missionaries as the punishment of their political intrigues; which he, as we have seen, was the first to provoke and make use of. He declared, besides, that in order to prove that he had not been moved

by blind hatred of Europeans, he was ready to load with presents and grants of land all who would come and initiate the Abyssinians in the knowledge of agriculture and the manual arts.

Under acts so contradictory from a moral point of view, it is easy to discern the trace of a single thought which was wanting neither in logic nor in grandeur. "The empire has decayed," said the negus, "because the legitimate sovereigns have ceased to rule with a strong arm, an intelligent head, and a pious heart. God has withdrawn His favour from the line of Solomon; He has given strength to the barbarians, to the Turks who have deprived us of Lennaar and Massaona, to the Gallas who have driven us back as far as Alaï; but as He does not wish His people to perish, He has raised me from the dust and commanded me to restore the imperial power, such as it was in the time of the negus Kaleb and the glorious emperors who conquered Yemen, and, finally, everywhere to reclaim from mussulman sway the ancient limits of Abyssinia. *My empire extends to the sea.....*" This last expression was a rather serious one, for it announced his intention of regaining by the sword the wild and almost desert sea-board snatched by the Porte in the sixteenth century from the careless and feeble grasp of the *King of kings*. The governors of Massaona are by no means sure, even to-day, as to the definite designs of their formidable neighbour, who is too intelligent not to perceive that, to a great state, a seaport is absolutely necessary, and that without this it must depend, even for its most fundamental necessities, upon more favoured states. The Porte, which derives neither political nor pecuniary advantage from Massaona, is well aware that it possesses the key of Abyssinia, and, too feeble to profit thereby, as it would have attempted under Selim the Great, it takes a childish and mischievous delight in weakening a great Christian state by keeping a sharp look out that she receives neither arms nor munitions of war. It remains to be seen what will become of this old prohibition when the negus, with happier inspiration, will be pleased to reply frankly to the advances of Europe, and to ask from it these improved weapons which he endeavours, with so much expense, to have imitated in his dominions.

His pretensions to Sennaar and Nubia are very questionable, and may be explained by a misunderstanding that is supported by the pedantic European courtiers who surround him. The Abyssinians, in adopting Christianity, have endeavoured to identify themselves with some one

of the nations recorded in the Old Testament, and, as their Bible has been translated from the Septuagint, they have taken without ceremony the name of Ethiopian, which they have applied to their ancestors. In place of the title "Kings of Axum," which appears to have been the first known to their sovereigns, was substituted, nobody knows when, that of *Kings of Ethiopia*. It is hardly necessary for me to recall the fact that the Ethiopia of the Greeks and Romans comprehended, in its most vague extension, the whole of Eastern Africa, except Egypt, and in its more precise and restricted sense, all Nubia from Syene. It is known now where reigned the two queens Candace, and where Meroe was. Theodore the Second, little versed in these erudite subtleties, only knew that he was emperor of Ethiopia, and that, in the time of David and Solomon—in his eyes, the *beau-ideal* of historic times—Ethiopia extended to the tropics: thus, since his accession, he has announced his intention of retaking from the Egyptians all Nubia as far as the other side of Dongola, leaving the execution of it to a more favourable period.

I have not yet spoken of two men, who have had, over the Negus Theodore, a great influence, that some writers have even exaggerated. They were two Englishmen, Messrs. James Bell and Walter Metcalfe Plowden. The latter was appointed English Consul at Gondar; and, in 1848, concluded a commercial treaty with ras Ali. He had early foreseen the high destiny of Kassa, and had attached himself to him, following him everywhere, living to a great extent upon his bounty, but never asking for recognition as consul, for the suspicious distrust of the Abyssinians would not have accorded it. "We do not wish," said an Abyssinian chief, in 1856, to the French consul of Massaoua, "We do not wish to allow foreign consuls to set themselves up like separate states in our empire. We have welcomed Mr. Plowden as a traveller. It is said that he is a consul; but had he demanded the privileges of his title (added this chief with the braggadocio characteristic of his nation), he had not lived for twenty-four hours.*

Mr. Bell was an old volunteer of the English navy, attracted to Abyssinia by the love of the unknown, and retained near the person of the future emperor by a sympathy which had ripened into a kind of

* The jurisdiction and exceptional immunities which consulates enjoy, make them, in the eyes of the Abyssinians, little sovereignties; and, according to them, the establishment of these agencies in Abyssinia would be equivalent to a dismemberment of the empire.

worship. A long time before the battle of Dereskie, he attached himself to his fortunes, good or bad, watching over him like a faithful mastiff, sleeping across his doorway. And this ardent sympathy was to a great extent reciprocated. The Negus listened, with pleasure, to his disinterested and sincere, although sometimes bold counsels; and got him to explain to him the history, comparative strength, policy, and present situation of the European States. A single fact may help to form a judgment as to the ascendancy of Mr. Bell over this strange man. One day, when he had asked justice from his royal friend for I know not what grievance, and had not obtained it, he remembered the old feudal custom, which allows the Abyssinian nobleman, on horseback and under arms, to speak to the sovereign with the most absolute freedom. He immediately took *his* lance and shield, mounted his horse, found the Negus seated among all his chiefs at the door of his tent, and reproved him sharply for his caprice, tyranny, and ingratitude. Theodore did not say a word. In the evening, the two friends were at supper together as usual: the Negus went out for a minute, then returned, bearing a heavy stone upon his neck, and bent down before Mr. Bell. According to the law of the country, every offended party has a right to this reparation on the part of the offender, whatever may be their difference in rank, and the Negus, as restorer of old customs, could not withdraw himself from it. Mr. Bell, surprised and confounded, flew towards him, took the stone in his hands, and, with respectful abruptness begged him, for the future, not to forget his royal rank. It is well to add, that this Englishman, treated with so much regard by Theodore, had the title of *Likamankuas*, that is to say, he was one of the four officers who on the day of battle wear the same dress as the Negus, in order to confuse the enemy when determined on his death: a perilous and purely honorary position, for it brings with it neither fief nor emolument, yet is eagerly sought after by a monarchical and chivalrous people. Mr. Bell was master of ceremonies to all Europeans that came to see his prince. His obliging disposition had no bounds, and knew no nationality. He preserves Theodore in those feelings of sympathy for France, which are natural to the Negus.

(*To be continued.*)

MONTHLY METEOROLOGICAL REGISTER, AT THE PROVINCIAL MAGNETICAL OBSERVATORY, TORONTO, CANADA WEST,—OCTOBER, 1864.

Latitude—43 deg. 39.4 min. North. *Longitude*—5 h. 17 min. 33 sec. West. *Elevation above Lake Ontario*, 108 *feet*.

Day.	Barom. at temp. of 32°. 6 A.M.	2 P.M.	10 P.M.	MEAN.	Temp. of the Air. 6 A.M.	2 P.M.	10 P.M.	ME'N	Excess of mean above Normal.	Tens. of Vapour. 6 A.M.	2 P.M.	10 P.M.	M'N	Humidity of Air. 6 A.M.	2 P.M.	10 P.M.	M'N	Direction of Wind. 6 A.M.	2 P.M.	10 P. M.	Resultant Direction.	Velocity of Wind. 6 A.M	2 P.M	10 PM	Resul't.	ME'N	Rain in Inches.	Snow in Inches.
					°	°	°	°	°																			
1	29.890	29.776	29.683	29.7753	45.0	49.0	48.9	47.80	— 2.62	.210	.253	.337	.270	.70	.73	.94	.80	E N E	E b N	E	N 86 E	7.6	14.5	13.0	11.79	11.89	1.190	...
2	.647	.709	—	—	50.4	55.1	—	—	—	.361	.386	—	—	.93	.89	—	—	E	N E b N	E b N	N 70 E	5.5	5.5	1.5	2.90	3.03	0.030	...
3	.820	.796	.806	.8163	51.1	56.9	54.7	54.55	+ 5.02	.352	.374	.414	.385	.94	.80	.97	.91	N E b E	E S E	E S E	N 57 E	4.0	5.0	0.5	2.36	3.77	0.010	...
4	.844	.834	.803	.8230	54.0	59.8	56.0	54.18	+ 5.15	.346	.417	.335	.362	.82	.81	.93	.86	N b W	W b S	Calm.	N 27 W	3.8	0.8	0.0	0.98	1.45	...	...
5	.752	.672	.562	.6567	47.2	56.9	55.8	53.77	+ 5.15	.287	.374	.434	.371	.89	.80	.98	.89	N N E	E	N E b E	N 76 E	3.5	8.5	5.0	4.09	4.33	0.405	...
6	.438	.230	.105	.2677	55.1	64.8	52.2	56.95	+ 8.73	.432	.542	.276	.406	.99	.88	.70	.85	N E b E	S b W	W S W	S 49 W	0.8	4.0	10.8	6.32	8.02	0.010	...
7	.246	.189	.037	.1716	51.5	54.4	52.2	52.62	+ 4.67	.306	.299	.348	.308	.80	.69	.89	.77	S W	S W	S	S 49 W	11.2	10.8	8.5	8.62	8.97	0.018	...
8	.026	.233	.416	.2378	42.5	37.4	35.6	38.27	— 9.18	.200	.179	.134	.169	.73	.80	.65	.72	W S W	N W b N	N W b N	S 73 W	3.0	7.5	5.5	7.04	8.88	..	Inp.
9	.516	.512	—	—	30.2	40.7	—	—	—	.142	.120	—	—	.84	.47	—	—	N W b W	W	S W	N 35 W	5.2	25.0	15.5	16.11	16.38	0.035	...
10	.209	.302	.603	.3035	47.2	55.8	40.7	47.03	+ 0.37	.250	.199	.196	.213	.76	.43	.77	.67	S W b S	W N W	W N W	N 85 W	20.5	21.0	6.0	10.88	12.65	..	...
11	.724	.763	.696	.7193	35.2	49.0	42.1	43.18	— 3.07	.183	.245	.201	.215	.89	.69	.76	.77	N W b N	S S W	N	N 83 W	2.2	5.5	6.4	1.16	3.17	Inp.	...
12	.575	.465	.529	.5193	41.7	45.0	39.6	41.87	— 4.10	.228	.269	.210	.236	.86	.90	.87	.88	N	N	N W.	N 44 W	3.5	1.0	10.5	5.44	5.78	0.200	...
13	.561	.514	.546	.5440	32.4	46.4	39.6	39.77	— 5.80	.161	.149	.219	.177	.87	.43	.90	.74	N W b W	N W	N b W	N 33 W	2.2	18.0	8.5	9.13	9.35	0.008	...
14	.538	.468	.446	.4808	33.4	49.7	33.5	41.02	— 4.25	.149	.169	.182	.167	.78	.47	.78	.66	N	N W b N	N W b N	N 37 W	10.5	9.0	7.6	7.53	7.77	....	...
15	.400	.320	.203	.3373	28.4	51.1	42.5	41.93	— 2.92	.134	.239	.139	.181	.86	.63	.59	.67	N W b N	S W b S	N W b N	N 65 W	2.8	8.0	5.0	3.88	5.25	0.230	...
16	.207	.305	—	—	42.8	46.8	—	—	—	.250	.217	—	—	.90	.67	—	—	N N E	W N W	W	N 86 W	4.5	15.2	10.0	9.65	10.70	0.085	...
17	.567	.605	.618	.6030	34.5	45.7	36.3	39.45	— 4.78	.173	.159	.163	.170	.86	.51	.78	.71	W b S	W b S	W	S 86 W	9.0	15.8	8.5	8.37	8.45	....	...
18	.475	.416	.417	.4325	35.6	46.1	41.7	41.33	— 2.70	177	.180	.200	.192	.85	.57	.76	.74	W	W b N	W b S	S 86 W	3.5	13.4	5.8	6.35	7.28	0.020	...
19	.371	.371	.393	.5237	41.4	47.2	37.0	41.93	— 1.85	.221	.211	.193	.208	.85	.64	.87	.78	W S W	W N W	W N W	N 80 W	5.8	16.0	3.8	6.39	6.71	0.018	...
20	.533	.673	.637	.6127	36.0	47.2	43.4	42.00	— 1.57	.180	.220	.200	.201	.85	.67	.73	.75	S W b W	W N W	W N W	N 71 W	5.0	11.8	6.5	8.25	8.51	....	...
21	.705	.551	.607	.6518	41.0	47.5	38.1	42.25	— 1.00	.218	.225	.204	.213	.85	.69	.88	.79	N W	W b S	N W b W	N 65 W	7.6	5.8	1.0	3.35	3.88	0.012	...
22	.514	.460	.425	.4668	40.7	50.4	43.9	44.93	+ 1.97	.204	.208	.235	.216	.89	.56	.82	.73	N N W	W N W	W b S	N 81 W	5.0	12.0	3.6	4.76	5.17	....	...
23	.357	.249	—	—	42.5	50.4	—	—	—	.240	.258	—	—	.85	.70	—	—	S W b W	S W b S	N N W	S 80 W	1.5	7.5	2.8	1.47	2.97	0.015	...
24	.371	.513	.637	.5270	42.8	42.1	42.1	42.33	— 0.17	.250	.241	.232	.236	.90	.89	.86	.87	N b W	N b W	N N W	N 8 W	1.0	5.8	2.5	3.64	3.93	Inp.	...
25	.722	.706	.754	.7327	39.6	49.7	39.9	42.95	+ 0.65	.219	.226	.193	.210	.90	.63	.80	.76	N W b N	S S W	N W b N	S 77 W	2.8	8.0	6.6	1.24	4.32	....	...
26	.745	.706	.630	.6633	37.4	47.5	44.6	43.88	+ 1.90	.179	.264	.245	.237	.80	.80	.83	.82	N b E	E N E	E b N	N 75 E	5.2	8.4	10.0	7.41	7.68	Inp.	...
27	.443	.287	.228	.3090	43 9	47.9	49.0	47.15	+ 5.37	.265	.321	.337	.305	.92	.96	.97	.94	E N E	E	S S E	N 82 E	7.0	5.5	5.0	4.86	5.31	0.110	...
28	.093	.048	.237	.1303	49.3	50.0	46.8	48.47	+ 6.98	.338	.313	.302	.320	.96	.86	.94	.94	N E b N	N W b W	W N W	N 60 W	4.8	17.2	11.2	10.19	10.81	0.720	...
29	.367	.439	.551	.4630	45.4	47.1	43.5	45.23	+ 4.02	.232	.304	.259	.283	.96	.94	.92	.93	W	S W b S	N b W	N 46 W	1.8	0.5	0.5	1.12	1.89	0.155	...
30	.677	.613	—	—	42.5	49.3	—	—	—	.241	.262	—	—	.89	.75	—	—	N b W	S S W	W b S	N 67 W	5.0	6.4	0.5	1.54	3.18	0.050	...
31	.691	.761	.854	.7748	42.1	41.7	36.7	39.57	— 1.18	.249	.191	.179	.197	.93	.72	.82	.80	N N E	N b W	W	N 11 W	4.2	6.8	4.0	4.30	4.96	....	...
M	29.5226	29.5037	29.5290	29.5207	42.09	49.47	43.67	45.17	+ 0.13	.239	.260	.246	.248	.86	.71	.83	.80					5.16	9.68	5.86		6.66	3.321	Inp.

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REMARKS ON TORONTO METEOROLOGICAL REGISTER FOR OCTOBER, 1864.

Note.—The monthly means do not include Sunday observations. The daily means, excepting those that relate to the wind, are derived from six observations daily, namely at 6 A.M., 8 A. M., 2 P.M., 4 P.M., 10 P.M., and midnight. The means and resultants for the wind are from hourly observations.

Highest Barometer.....29.890 at 6 a.m. on 1st } Monthly range =
Lowest Barometer.....29.026 at 6 a.m. on 8th } 0.864 inches.

Self-registering Thermom.
- Maximum Temperature .....67°0 on p.m. of 6th } Monthly range =
- Minimum Temperature .....28°0 on a.m. of 15th } 39°0
- Mean maximum Temperature ..... 52°05 } Mean daily range=
- Mean minimum Temperature ..... 39°73 } 12°32
- Greatest daily range .....26°0 from a.m. to p.m. of 13th.
- Least daily range..... 3°2 from a.m. to p.m. of 24th.

Warmest day ..... 6th... Mean temperature..... 56°95 } Difference = 18°08.
Coldest day ..... 8th... Mean temperature ..... 38°27 }
Maximum { Solar... ..... 106°5 on p.m. of 4th } Monthly range =
Radiation. { Terrestrial..... 19°8 on a.m. of 18th } 86·7

Aurora observed on 2 nights, viz.,—on 12th and 19th.
Possible to see Aurora on 11 nights; impossible on 21 nights.
Snowing on 1 day; depth inappreciable; duration of fall, 1 hour.
Raining on 22 days, depth 3.321 inches; duration of fall 101.0 hours.
Mean of cloudiness = 0.74; above average 0.11.
Most cloudy hour observed, 2 p.m.; mean = 0.81; least cloudy hour observed, midnight; mean, = 0.65.

Sums of the components of the Atmospheric Current, expressed in miles.

North.	South.	East.	West.
1841.61	675.17	844.89	2891.17

Resultant direction N. 60° W.; Resultant velocity 3.17 miles per hour.
Mean velocity .....6.66 miles per hour.
Maximum velocity ..... 30.7 miles, from 6 to 7 a.m. on 10th.
Most windy day ..... 8th.....Mean velocity, 16.38 miles per hour. } Difference=
Least windy day.....4th .....Mean velocity, 1.45 ditto } 14.93 miles.
Most windy hour ..... 1 to 2 p.m.....Mean velocity, 10.15 ditto. } Difference=
Least windy hour ..... 3 to 4 a.m.....Mean velocity, 4.84 ditto. } 5.31 miles.

2nd. Fog 6 a.m.—4th. Solar halo at 7 a.m.—5th. Heavy dew at 6 a.m.—6th. Very dense fog 6 to 9 a.m.; lightning and thunder in N.W. 5.30 to 6.30 p.m.—8th. Particles of snow 8.30 to 11.30 a.m. (first of the season).—9th. Thin ice at 6 a.m.—11th. Hoar frost 6 a.m.; faint lunar halo at midnight.—12th. Auroral light in N. from 11 p.m.—13th, 14th, and 15th. Thin ice at 6 a.m.—16th. Fog at 6 a.m.—19th. Perfect rainbow at 4.20 p.m.; auroral light and streamers 7.30 to 8.30 p.m.—26th. Hoar frost at 6 a.m.—27th. Dense fog at 4 p.m.—28th. Dense fog 6 a.m.—29th. Fog from 4 p.m.—Almost constant rain from 9 a.m. of 27th to 7 a.m. of 30th.

The month of October, 1864, was comparatively cold, wet, windy and cloudy; the number of days on which rain fell was nearly double the average.

COMPARATIVE TABLE FOR OCTOBER.

Year.	Temperature. Mean.	Excess above aver'ge (26.1)	Max. observed.	Min. observed.	Range.	Rain. No. of days.	Rain. Inches	Snow. No. of days.	Snow. Inches	Wind. Resultant. Direction.	Resultant. Vel'y.	Mean Force or Velocity.
	°	°	°	°	°							
1840	44.4	— 1.2	68.5	23.9	44.6	13	1.860	3	...	...	...	.....
1841	41.6	— 4.0	58.3	20.3	38.0	6	1.360	2	...	...	...	0.41 lbs.
1842	45.1	— 0.5	68.5	30.0	38.5	8	5.17	0	...	...	...	0.55
1843	41.8	— 3.8	65.7	24.5	41.2	12	3.790	4	2.5	..	...	0.54
1844	43.3	— 2.3	69 6	17.8	51 8	7	Imp.	4	12 0	..	...	0.43
1845	46.4	+ 0.8	62.7	20 0	42.7	11	1 760	1	..np	...	...	0.26
1846	44.6	— 1.6	69 7	20.7	49.0	14	4.180	2	Inp.	...	...	0.44
1847	44.0	— 1.6	65.0	20.3	44.7	13	4.390	2	Inp.	...	...	0.19
1848	46.3	+ 0 7	62 2	26.4	35.8	11	1.550	0	0.0	N 54° W	1.24	4.60mls.
1849	45.3	+ 0.3	59.2	25.5	33.7	13	5.96	1	Inp	N 12° W	1.27	7.76
1850	45 4	— 0.2	65 6	24.8	41.8	10	2.085	0	0.0	N 66° W	1.16	5.30
1851	47.4	+ 1.8	66.1	25.0	41.1	10	1.68	2	0.3	S 72° W	1.06	4.39
1852	48.0	+ 2.4	70.7	29 8	40.9	12	5.280	0	0.0	N 5° E	1 19	4.47
1853	44.4	— 1.2	64.7	25.5	39.2	10	0 875	2	Inp.	S 88° W	1 74	4.77
1854	49.5	+ 3.9	74.2	29.8	44.4	15	1.495	3	Inp	N 45° W	1.52	4.57
1855	45.4	— 0.2	64.3	28.0	36 3	14	2.485	5	0.8	N 82° W	4.91	9 88
1856	45.3	— 0 3	70.1	23.3	46 8	10	0 875	2	0.1	N 76° W	2.15	6.07
1857	45.4	— 0.2	63 5	27 7	35.8	10	1.040	2	0 2	N 19° W	2.93	6.2½
1858	48.8	+ 3.2	76.3	34 2	42.1	17	1.797	1	Inp.	N 34° W	0.36	5.96
1859	43.0	— 2.6	68.4	22 3	46.1	11	0.940	4	Inp	N 68° W	5 01	8.12
1860	47.3	+ 1.7	63.7	28.4	35.3	15	1.618	1	Inp	N 9° W	2.00	6.93
1861	48.7	+ 3.1	64 5	30.2	34.3	15	1.993	1	Inp	N 61° W	1.06	5.96
1862	48.7	+ 3.1	76 0	27.0	49.0	19	2.081	2	0.5	N 78° W	2.89	6.53
1863	45.9	+ 0.5	63.4	30 9	32.5	16	2.522	0	0.0	S 71° W	0.48	6.16
1864	45.2	— 0 4	64.8	28.4	36.4	22	3.321	1	Inp	N 60° W	3 17	6.66
Results 1864. 3	45.65	...	66.67	25.79	40.88	12.6	2 530	1.8	0.78	N 60° W	1.74	6.14
Exc. for 1864.	— 0.48	...	— 1.87	+ 2.61	— 4.48	+ 9.4	+ 0.791	— 0.8	— 0.78	.....	.. ..	+ 0.52

MONTHLY METEOROLOGICAL REGISTER, AT THE PROVINCIAL MAGNETICAL OBSERVATORY, TORONTO, CANADA WEST,—NOVEMBER, 1864.

Latitude—43 *deg.* 39.4 *min. North. Longitude*—5 *h.* 17 *m.* 33 *s. West. Elevation above Lake Ontario,* 108 *feet.*

Day.	Barom. at temp. of 32°.				Temp. of the Air.				Excess of mean above Normal.	Tens. of Vapour.				Humidity of Air.				Direction of Wind.			Resul't. Direction.	Velocity of Wind.					Rain in inches.	Snow in inches.
	6 A.M.	2 P.M.	10 P.M.	Mean.	6 A.M	2 P.M	10PM	M'E'N		6 A.M	2 P.M.	10 P.M.	M'N	6 A.M	2 P.M.	10 P.M.	M'N	6 A. M.	2 P. M.	10 P. M.		6 AM.	2 P.M.	10 P.M.	Resul't.	M'E'N		
	—	—	—	—	°	°	°	°	°	—	—	—	—	—	—	—	—	—	—	—	°	—	—	—	—	—	—	—
1	29.660	29.962	29.932	29 9718	34.9	40.7	30.2	34.83	— 5.63	.131	.136	.142	.137	.65	.53	84	.69	N	N w bN	N b w	N 21 W	3.0	11.4	2 5	3.42	3.61	...	...
2	.958	.884	.827	.8872	29.1	39.2	37.8	35.53	— 4.73	.133	.164	.183	.164	.83	.67	.80	.79	N N W	s w b w	w b s	N 61 W	2.0	4.5	2.0	1.91	2.47	...	...
3	.718	.589	.336	.5280	34.9	39.6	39.9	38.30	— 1.70	.178	.150	.156	.162	.87	.51	.62	.69	N b w	s b E	E	S 87 E	3.0	6.5	14.6	8.35	9.32	.620	...
4	28.921	28.671	28.966	28.8670	40.7	38.5	34.2	37.78	— 1.98	.252	.208	.153	.202	.95	.89	.77	.87	E S E	N W	W N W	N 47 W	14.0	16.2	14.5	7.83	12.66	.225	Inp.
5	29.231	29.467	29.628	29.4630	29.5	33.4	27.7	29 73	— 9.75	.129	.112	.106	.115	.78	.58	.70	.70	N W	N W bW	w b s	N 63 W	16 6	18.0	1.2	S.29	8.76	...	Inp.
6	.622	.520	—	—	28.0	46.4	—	—	—	.124	.221	—	—	.81	.70	—	—	w s w	S	S E b E	S 10 E	3.0	9 6	5.5	5.89	7.69	.065	...
7	.505	.684	.789	.7032	42.8	52.6	40.7	45.30	+ 6.30	.250	.259	.231	.245	.90	.65	.91	.82	s w bw	s w b s	s w b s	S 34 W	5.7	8 5	3.2	6.10	6 12	...	...
8	.802	.631	.497	.6285	40.7	47.2	50.0	46.27	+ 7.58	.241	.287	.356	.295	.95	.89	.99	.93	s w b s	E	E N E	N 82 E	5.5	12.0	7 5	5.82	6.74	.705	...
9	.281	.103	28.888	.0832	54.0	56.5	55.8	55.13	+16.73	.412	.455	.389	.403	.99	.99	.87	.92	s b E	S	s w b s	S 35 W	7.0	9.6	18.4	14.01	14.80	.720	...
10	.088	.147	29.258	.1830	42.1	45.0	36.0	40.55	+ 2.47	.171	.117	.189	.155	.62	.36	.89	.62	s w b w	W S W	s w b w	S 60 W	22.6	25 0	16.5	20.17	20 23	...	...
11	.278	.296	.348	.3117	34.2	36.0	33.1	34.23	— 3.55	.163	.130	.167	.147	.85	.61	.88	.75	s w b w	W S W	s w b w	S 72 W	12.5	14.0	8.0	10.11	10.27	...	...
12	.338	.366	.528	.4258	25.5	36.3	28.7	30.27	— 7.23	.125	.168	.101	.125	.91	.78	63	.73	W S W	N b W	W N W	N 43 W	1.0	10.8	15.6	9.56	10.63	...	...
13	.696	.636	—	—	27.0	31.6	—	—	—	.115	.111	—	—	.77	.62	—	—	— W N W	N W	W N W	N 52 W	7.0	13.0	9.5	9.02	9 08	...	Inp.
14	.278	.874	.826	.8592	21.9	32.4	30.2	28.22	— 8.68	.090	.109	.128	.111	.77	.58	.76	.71	N W bW	N W	Calm.	S 33 W	8.0	4.2	0.0	0.77	6.12	...	1.5
15	.614	.616	.877	.7107	27.3	30.6	29.5	29.18	— 7.32	.118	.131	.136	.129	.79	.76	.83	.80	E S E	N W	N W bW	N 14 W	12.5	15.8	4.6	3.18	5.96	...	3.0
16	30.027	30.062	.997	30 0277	23.7	35.6	33.4	31.82	— 4.38	.112	.149	.163	.146	.87	.72	.85	.81	N W b W	S	E b S	S 58 E	2.5	4.8	9.6	3.87	5.33	...	...
17	29.819	29.648	.661	29.7138	34.5	39.2	40.3	37.75	+ 1.95	.181	.233	.219	.204	.90	.97	.87	.90	E b S	E b S	W	S 87 W	2.0	3.2	7.0	3.27	5.56	.005	...
18	.778	.686	.785	.7543	29.8	41.7	33 4	34.80	— 0.68	.140	.148	.146	.147	.84	.56	.76	.73	W b N	W b S	S W b W	S 76 W	3.4	13.8	6.0	9.37	9.64	..	...
19	.805	.744	.630	.7210	29.1	38.9	36.0	34.53	— 0.55	.126	.151	.189	.155	.78	.63	.89	.77	W S W	S S W	S S W	S 26 W	1.0	8.8	3.8	3 97	4.20	...	...
20	.634	.410	—	—	29.8	41.0	—	—	—	.147	.158	—	—	.88	.60	—	—	S S W	S E	S S E	S 32 E	2.0	8.8	7.0	3.89	5.60	.035	...
21	.736	.290	.254	.2727	39.9	38.9	32.7	36.38	+ 2.00	.224	.135	.135	.159	.91	.57	.73	.73	s w b s	W S W	W b S	S 73 W	7.0	12.4	5.6	8 27	8.82	...	...
22	.222	.296	.364	.3065	30.6	29.1	27.0	28.47	— 5.62	.144	.094	.129	.115	.85	.50	.88	.73	W	W S W	W b S	S 80 W	12.5	13.0	12.6	13.00	13.28	...	Inp.
23	.528	.760	.941	.7677	21.9	26.6	24.8	24.48	— 9.18	.084	.091	.085	.087	.71	.62	.63	.66	W N W	N N W	W b S	N 57 W	7.2	14.0	6.6	6.32	6.99	...	Inp.
24	.981	.988	30.053	30.0147	25.5	31.3	32.0	30.68	— 2.58	.133	.115	.166	.143	.96	.65	.91	.83	W b S	W S W	S W	S 52 W	0.5	3 0	1.0	2.44	2.48	...	Inp.
25	30.108	30.070	29.976	30.0462	31.6	37.4	34.2	34.17	+ 1.20	.140	.135	.168	.149	.78	.60	.85	.76	Calm.	S S W	S b W	S 13 W	0 0	2.5	2.0	1.80	1.85	...	...
26	29.804	29.658	.601	29.6765	37.8	40.1	39.9	39.18	+ 6.62	.199	.221	.233	.219	.87	.89	.95	.91	s b W	S S W	S b E	S S W	4.5	5.6	5.5	4.91	5.31	.315	...
27	.610	.622	—	—	34.2	43.2	—	—	—	.185	.217	—	—	.93	.77	—	—	s w b w	N W	S W	S 56 W	4.4	2.0	3.5	1.27	3.22	...	...
28	.544	.308	.297	.3730	37.8	45.4	48.9	44.42	+12.53	.217	.283	.330	.284	.95	93	.98	.96	E	E	S W	S 16 E	6.5	1.8	3.5	2.25	4.65	1.020	...
29	.228	.160	.227	.2053	48.6	56.2	48.2	50.58	+19.08	.337	.384	.317	.343	.98	.85	.94	.93	s w b s	S W	S W	S 45 W	3.2	7.5	3.6	5.22	5.31	.055	...
30	.360	.543	.689	.5480	51.5	51.5	40.3	46.92	+15.83	.254	.164	.166	.195	.66	.42	.66	.61	W b S	W b N	W S W	S 86 W	16.0	21.8	5.0	12.98	13.12	Inp.	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
M	29.5819	29.5578	29 5856	29.5790	34.61	40.00	36.8	36.91	+ 0.76	.180	.181	.188	.182	.84	.69	.82	.78	.....	.....	.....	.....	6.52	10.07	6.84	.....	7.64	3.765	4.5

REMARKS ON TORONTO METEOROLOGICAL REGISTER FOR NOVEMBER, 1864.

[Note.—The monthly means do not include Sunday observations. The daily means, excepting those that relate to the wind, are derived from six observations daily, namely, at 6 A.M., 8 A.M., 2 P.M., 4 P.M., 10 P.M., and midnight. The means and results for the wind are from hourly observations.

The month of November, 1864, was comparatively mild, wet, windy, and cloudy.

Highest Barometer . . . . . 30.126 at 8 a.m. on 25th. } Monthly range=
Lowest Barometer . . . . . 28.671 at 2 p.m. on 4th. } 1.455 inches.

Self-register-ing Ther.:
- Maximum temperature . . . . 60°2 on p.m. of 9th } Monthly range=
- Minimum temperature . . . . 21°0 on a.m. of 24th } 39°2
- Mean maximum temperature . . 42°85 } Mean daily range=11°53
- Mean minimum temperature . . 31°31 }
- Greatest daily range . . . . . 24°5 from a. m. to p. m. of 6th.
- Least daily range . . . . . 3°4 from a. m. to p. m. of 22nd.

Warmest day . . . 9th...Mean Temperature . . . 55°13 } Difference=30°.65
Coldest day . . . . 23rd...Mean Temperature . . . 24°48 }
Maximum Solar (Vacuum) . . . . 98°0 on p. m. of 7th } Monthly range=
Radiation Terrestrial . . . . . 12°0 on a. m. of 24th } 86°.0

Aurora observed on 1 night, viz.:—on 19th.
Possible to see Aurora on 9 nights; impossible on 21 nights.
Raining on 11 days; depth 3.765 inches; duration of fall, 91.7 hours.
Snowing on 8 days; depth 4.5 inches; duration of fall, 13.0 hours.
Mean of cloudiness=0.75; above average, +.01. Most cloudy hour observed. 8 a.m. mean=0.30; least cloudy hour observed, 10 p.m.; mean=0.70.

Sums of the components of the Atmospheric Current, expressed in Miles.

North.	South.	East.	West.
968.32	1811.19	817.94	3435.69

Resultant direction, S. 72° W.; Resultant Velocity, 3.82 miles per hour.
Mean velocity 7.64 miles per hour.
Maximum velocity 40.2 miles, from 1 to 2 a.m. on 10th.
Most windy day 10th—Mean velocity 20 23 miles per hour. } Difference 18.38
Least windy day 25th—Mean velocity 1.85 miles per hour. }
Most windy hour, 1 to 2 p.m.—Mean velocity, 10.48 miles per hour. } Difference
Least windy hour, 4 to 5 a.m.—Mean velocity, 6 16 miles per hour. } 4.32 miles.

7th. Lunar halo 10 p.m.
8th. Dense fog from 4 p.m.
9th. Dense fog till 2.40 p.m.
16th. Lunar halo 5 p.m. to midnight.
17th. Dense fog 8 a.m. till 3 p.m.
19th. Auroral light and streamers, 7 to 9.20 p.m.
21st and 25th Solar halo 2 p.m.
27th. Ground fog, 7 to 8 p.m.
28th. Fog at 10 p.m. and midnight.
29th. Fog till 9 a.m. Sheet lightning 7 to 10 p.m

COMPARATIVE TABLE FOR NOVEMBER.

YEAR.	TEMPERATURE. Mean	Excess above Average (1853).	Maximum observed.	Minimum observed.	Range.	RAIN. No. of days.	Inches.	SNOW. No. of days.	Inches.	WIND. Resultant. Direction.	Velocity.	Mean Force or Velocity
	°		°	°	°							
1840	35.9	— 0.8	54.4	20.5	33.9	5	1.220	8	...	...	...	...
1841	35.0	— 1.7	63.2	7.6	55.6	8	2.450	5	...	...	...	0.91 lbs
1842	33.3	— 3.4	50.6	7.6	43.0	9	5.310	10	...	...	...	1.22 "
1843	33.5	— 3.2	51 2	14.4	36.8	10	4.765	7	1.2	...	...	0.59 "
1844	34.9	— 1 8	49.8	12.0	37.8	8	Imp	4	8.0	...	...	0.48 "
1845	36.8	+ 0 1	58.8	7.6	51.2	7	1.105	4	5 0	...	...	0.53 "
1846	41 3	+ 4.6	55.5	18.2	37.3	12	5.805	2	0.4	...	...	0 64 "
1847	38 6	+ 1 9	58.2	7.8	50.4	14	3.155	3	Inp.	...	...	0.36 "
1848	34.5	— 2.2	49.3	16.5	32.8	9	2.020	3	1.4	N 81 W	1.81	4.81 ms
1849	42 6	+ 5 9	56.7	28.4	28 3	10	2.815	2	1.0	N 39 W	1.55	4.78 "
1850	38.8	+ 2.1	62.3	18.1	44 2	7	2.955	1	Inp.	N 42 W	1.43	5.27 "
1851	32.9	— 3 3	50.1	16.5	33.6	5	3.885	6	6.7	N 59 W	1.25	4.70 "
1852	36.0	— 0.7	50.4	18.7	31 7	7	1.775	3	2.0	N 59 W	1.53	6.50 "
1853	38.7	+ 2.0	54.1	14.4	39.7	15	2.425	6	2.7	N 9 W	0.55	5.52 "
1854	36.8	+ 0 1	54.9	15.1	39.8	13	1.115	4	1.3	W	3.44	7.54 "
1855	38.6	+ 1.9	54.1	18.7	35.4	8	4.590	6	3.0	N 66 W	3.18	10.81 "
1856	37.4	+ 0.7	56.4	22 8	33.6	10	1.375	9	9.5	S 85 W	2.95	8.75 "
1857	33.5	— 3.2	57.8	—2 3	60.1	14	3.235	9	6.9	S 61 W	5.45	9.25 "
1858	34.2	— 2.5	52.0	20.5	31.5	12	3.875	13	4.0	N 25 W	3.14	8.87 "
1859	38 3	+ 2.2	61.0	24.1	36.9	12	5.195	9	0.6	N 81 W	3.39	9 65 "
1860	37.5	+ 1.2	62.7	14.0	48..	12	2.565	8	1.9	S 89 W	4.95	11.02 "
1861	37.1	+ 0.4	51.5	25.1	26.4	14	4.295	8	3.2	N 46 W	1 94	7.44 "
1862	35 6	— 1.1	58.6	17.2	40.8	11	2.205	11	5.3	N 46 W	3.00	6.60 "
1863	39.1	+ 2.4	57.6	19.4	38.2	13	3.655	6	0.1	N 88 W	3.50	7.86 "
1864	36 9	+ 0 2	56.5	21.9	34 6	11	3.765	8	4.5	S 72 W	3.82	7.64 "
Results to 1864.	36.75	...	55.48	16.19	39.29	10.2	3.148	6.2	3.12	N 78 W	2.43	7.47
Exc. for 1864.	+0.15	...	—1.02	—5.71	—4.69	0.8	0.617	1.8	1.38	...	...	+0 17