can doubt that the stock of knowledge possessed by the human race at large is rapidly increasing, and will continue to do so. But in the second we meet with several difficulties. If, as Dr. Paul Carus says, metaphysics is "a disease of philosophy" and devoid of value, its decreased influence in the world of thought would seem to indicate a progress of the human mind in the direction of healthy and fruitful activities. But the fact that all science presupposes certain metaphysical concepts,— as that of the trustworthiness of the instinct which attributes objectivity to phenomena cognized by the senses,— would seem to belie the dictum of the great monist; and, as the abstract notions of metaphysics are much farther removed from sub-human psychological conditions than are the concrete ones of natural science, the disuse of metaphysics would appear from an evolutionary standpoint to be, like the atrophy of the religious sense, an indication of retrograde development. Nevertheless, the widely diffused intellectual activity of the present, in which even metaphysics is represented by a greater number of schools than ever before, and which, for the first time in the history of the world, has a broad basis of scientific facts, cannot but tend towards a still higher intellectual condition. One of the most important steps in this direction will surely be a synthesis of the now comparatively isolated departments and schools of human knowledge and thought.

No factor is more promising than the new scientific theories of education; which ought of themselves, when their application has become more general, to develop within a few generations a new and superior type of mind.

No theory about the psychological future of mankind can afford to ignore the strange possibilities opened up by the science of hypnotism. This is a most fruitful field of speculation. We live in a period of esthetic decadence; but neither can esthetic development be left out of account. The esthetic faculty contributes more than any other to individual happiness, and it may be capable of being brought by systematic cultivation to a degree of perfection hitherto unknown.

To sum up, it would seem that there is an undoubted material progress under way, from which wonderful and startling results are to be anticipated, but which will not, unless accompanied by a great intellectual decadence, terminate, as Dr. Shufeldt predicts, in a total destruction of the forests, or, indeed, of any portion of the flora or fauna of the globe which has even a picturesque or decorative value. The wide-spread idea that the development of material resources is all there is of progress, is both an effect and a cause of a temporary tendency to physical, social, and psychological retrogression.

Neither our senses nor our memories are as acute as those of our barbarian ancestors; our taste and capacity for intellectual speculation is not as great as was possessed by our predecessors of the scholastic period, or by the south Asiatic Aryans of any historic time; the ideals of strength and intensity embodied in the Niebelungenlied, those of delicacy and grace which gave rise to the Arthurian legends, and those of divine love and beauty which inspired the Old Masters, have alike become dim and distant to us; and the low vice of avarice rules the day.

But never before was the sum of human knowledge so vast; never were all questions, physical, social, and psychological, studied so carefully and in so full a light; never was the importance of education, and of right education, so generally recognized and insisted upon; and never has the race seemed so near to that fusion into one great world-nation which is indispensable to a universal distribution of the knowledge and ideas and materials which are now of but local utility.

The tendency of the times is to subordinate man to civilization; but civilization is useless except in so far as it promotes the happiness or personal development of man. If any real improvement is to be accomplished in the race itself, in contradistinction to its material environment, there will evidently be necessary a systematic encouragement of that salutary inequality by which favorable variations are husbanded and a specialization of function in the social organism secured.

I cannot venture, in view of the complexity of the problem, to hazard a prediction even for the next stages of human evolution, to say nothing of the millions of years over which Dr. Shufeldt so gaily gambols. His very dramatic picture of the last man can, however, never be realized in fact unless the expected modification in the human organism shall amount to a radical transformation. It is inconceivable that man should be the last of all living forms to disappear during the process of the earth's cooling. As at present constituted, he would succumb, even with all the appliances of civilization, long before many of the lower species. Most of the latter could, in no supposition, be exterminated by him, and many of them, as the doctor well knows, possess incredible powers of resistance to unfavorable climatic and other conditions.

Speculations regarding so very remote a future are of doubtful utility, especially in view of the daily possibility of one of those celestial casualties familiar to astronomers, such as a collision with a dead sun. I forbear to picture the sublime horrors of such an event, but they may at any moment be realized, though with such rapidity that before any human mind could guess the truth the whole solar system would have been dissolved, by the heat resulting from the impact, into invisible vapor.

MERWIN MARIE SNELL.

Washington, D.C., Oct. 26.

Government Science.

THE communication of Eugene Murray Aaron in the issue of *Science* for Oct. 23, under the above heading, contains statements and presents conclusions which I believe to be well founded. Like that writer, I am warmly in favor of the recent reforms in the methods of filling vacancies in the various departments of the civil service, in positions where technical and scientific knowledge is not required. But I am firmly of the opinion that if the heads of scientific bureaus were allowed to select their assistants, subject of course to the approval of the Civil Service Commission, far better results would be secured.

An instance was recently reported to me similar to the case cited by Mr. Aaron. A Washington daily contained the announcement of a vacancy in a subordinate position requiring special scientific attainment. A few young men, hanging around Washington for something to turn up, saw the advertisement as soon as it appeared, and at once placed themselves under instruction to "cram" for the examination. The one of their number who showed the highest average secured the position.

A man far more competent to fill it, residing many miles from Washington, was urged by friends to make application. His letter of inquiry was received too late, and thus a tyro was appointed when an expert might have been secured, to the expressed disgust of eminent scientists in government employ. C.

Highlands, N.C., Oct. 30.

Words of Algonkian Origin.

The Chinook jargon, that *lingua franca* of the region of the Columbia, has recruited its vocabulary from many different sources. Amongst others the Algonkian tongues have contributed their share towards the formation of this linguistic mosaic.

In the "Partial Vocabulary of the Chinook Jargon," given in 1863, by Theodore Winthrop (Canoe and Saddle, Boston, 1863. New ed., Peterson, Edinburgh, 1883, pp. 211–214), we find the following words of Algonkian origin:

Kinni-kinnik, = smoking-weed,
Tatoosh, = milk, cheese, butter.
Wapato, = potato.

The word *moos-moos*, "beef," "cattle," which also occurs, is probably not Algonkian. It occurs in a vocabulary of the "Chenook" of Fort Vancouver, and the "Calapooa," collected before the year 1840, by the Rev. Samuel Parker (see Journal of an Exploring Tour beyond the Rocky Mountains, Ithaca, 1840, pp. 393, 398).

George Gibbs, in his "Dictionary of the Chinook Jargon, or Trade Language of Oregon" (Smithson. Miscell. Coll. 161, Washington, 1863. pp. xiv., 44), attributes a Cree origin to two, and a Chippeway origin to one, of the 490 words of which the jargon was then composed. These words, regarding which he observes: "The introduction of the Cree and Chippeway words is of course

due to the Canadians" (p. viii.), are as follows: "*Mit-ass, n.* Cree, Mitas (Anderson). Leggings. A word imported by the Canadian French (p. 17). *Sis'-ki-you, n.* Cree (Anderson). A bob-tailed horse (p. 23). *Totoosh*, or *Tatoosh, n.* Chippeway, totosh (Schoolcraft). The breasts of a female, milk. *Totoosh lakles* [*la graisse*], butter."

The other words, the second of which is clearly Algonkian, Gibbs thus describes: "*Moos-moos n.* Klikatat *músmus;* Chinook, *emúsmus.* Buffalo, horned cattle. The word, slightly varied, is common to several languages. Mr. Anderson derives it from the Cree word *moostoos*, a buffalo, and supposes it to have been imported by the Canadians; but Father Pandosy makes *músmus* Yakama" (p. 17). "*Wap pa-too, n.* Quære, *u. d.* The root of the *Sagittaria sagittifolia*, which forms an article of food; the potato. The word is neither Chinook nor Chihalis, but is everywhere in common use" p. 28). "*Le-pish'-e-mo, n.* Quære, *u. d.* The saddle-blanket and housings" (p. 15).

The last of the above three words is most likely of mixed French and Algonkian etymology.

In the "Manual of the Oregon Trade Language, or Chinook Jargon," published by Mr. Horatio Hale in 1890, the following words occur without their Algonkian origin being indicated:

Lepishemo (lipishímo), saddle housing (p. 47).
Mitass, J [argon] (mitás), leggings (p. 48).
Totoosh, J [argon] (totúsh), breast, udder, milk (p. 52).

And the English-Chinook vocabulary yields the following, of which the origin is likewise not noted:

Breasts, *totoosh* (p. 54).
Butter, *totoosh lakles* (*la graisse*, Fr.), p. 23.
Leggings, *mitass* (p. 57).
Milk, *totoosh* (p. 58).
Potato, *wappatoo* (p. 59).

The word *moosmoos* also finds place in Professor Hale's vocabulary, with the meanings "buffalo, cattle, ox," and is set down as [Chinook] (p. 48). The words of Algonkian origin which are to be found in the vocabulary of Chinook, as given by the above authorities, are consequently: *Kinni-kinnik*, [*le*] *pishemo, mitass, siskiyou, totoosh, wappatoo.*

Regarding the etymology of these loan-words, the following may be said:

Kinni-kinnik. Derived directly or indirectly from Otcipwē. The cognates are Otcipwē (Baraga) kiniginige, "I am mixing together something of different kinds." (Cuoq) *kinikinige*, "mêler ensemble des choses de nature différente." The radical is seen in Algonkin (Cuoq) kinika, "pêle-mêle" = Cree *kiyekaw.*

Lepishimo. This word evidently consists of the French article *le* and a radical [*a*]*pishemo.* This latter corresponds to the Otcipwē (Baraga) *apishamon*, "anything to lie on; a bed; *apishemo*, "I am lying on something." Compare the western Americanism *apishamore*, which Bartlett (Dict. of Americanisms, 1877) thus defines: "*Apishamore* (Chippewa, *apishamon*). Anything to lie down on; a bed. A saddle-blanket made of buffalo-calf skins, much used on the prairies."

Mitass. Directly or indirectly (through French-Canadian) from Otcipwē or Cree. The cognate words are: Otcipwē (Baraga), *midâss;* Algonkin (Cuoq), *mitas;* Cree (Lacombe), *mitâs.* The word exists in Canadian-French in the form *mitasse.* Dr. Franz Boas kindly informs me that "legging" in Chinook and Clatsop is *imētas.*

Siskiyou. Though this word is assigned a Cree origin by Mr. Gibbs, its etymology is very uncertain. Blackfoot *sakhsíu*, "short," and Cree *kiskikkuttew*, "he cuts in two," offer themselves for comparison, but with no certainty.

Tatoosh, totoosh. From Cree or Otcipwē. The cognate words are: Cree (Lacombe), *totosim*, "mammelle, pis;" Otcipwē (Baraga), *totosh*, "breast, dug, udder;" Alkonkin (Cuoq), *totoc*, "mammelle."

Wappato, wappatoo. From Cree or Otcipwē. The cognate words are: Cree (Lacombe) *wâpatow*, "champignon blanc;" Otcipwē (Baraga), *wâbado*, "rhubarb;" Algonkin (Cuoq) *wabato*, "rhubarbe du Canada." It is in all probability a derivative from the root *wap-*(*wab-*), "white."

Another word may be added to the list, viz., *pāpūs* (*papoose*) = child. This word is used by the speakers of Chinook in eastern British Columbia. The Algonkin origin of the word has been disputed by some, but there is every reason to believe that it is connected with the root seen in the Massachusetts *papeississu* (Eliot) = "he is very small;" *peisses* (Eliot), "child;" *pe-u* (Eliot), "it is small." From this root there seems little doubt that the word *papoos* or *papoose* found in Roger Williams, and in Wood ("New Engl. Prospect"), has been derived, as Dr. Trumbull points out.

It might be remarked that the words *kinni-kinnik, lepishemo, mitas, totoosh, wapato*, and *papoose* were all heard by the writer in western British Columbia in the summer of the present year, so they are still in use as part of the jargon. The word *siskiyou* was not heard and is probably obsolescent.

It is a remarkable and an interesting fact that the Algonkian family of languages has borne its part in the formation of the curious jargon of the Pacific coast of North America. The presence there of these words is due in part to isolated Otcipwēs and Crees who have crossed the Rockies, and to the French-Canadian half-breeds in whose language these words are also to be found.

A. F. CHAMBERLAIN.

Worcester, Mass., Oct. 24.

Auroral Phenomena.

ON Sept. 9 there was seen at Lyons, N.Y., a band of light narrower than the Milky Way, arising from the western horizon and passing nearly vertically through the constellations of the Northern Crown and Lyre, just south of the zenith, and thence downward at times to the eastern horizon. There was an aurora at the time in the northern sky, but this band maintained its position throughout the evening entirely independent of the display, although varying somewhat in brightness in sympathy with the aurora and evidently being itself of an auroral nature. On Sept. 10 and 11 an aurora was visible in Great Britain, and, as appears from descriptions in *Nature* for Sept. 17 (p. 475) and Sept. 24 (p. 494), a band of light similar to that which constituted such a remarkable feature in the display at Lyons was likewise seen in that locality also. Other instances have been noted by the writer in which some peculiarity of form or color has attended an outbreak of the aurora on both sides of the Atlantic.

There is this evening in the western sky a magnificent display of red light similar to the sunset glows which attracted so much attention a few years since. Three-quarters of an hour after sunset the entire western heavens are lurid red, resembling the reflection from a conflagration.

M. A. VEEDER.

Lyons, N.Y., Oct. 29.

Chautauqua and other Iroquois Names.

MR. ALBERT S. GATSCHET has kindly sent me his paper on the "Origin of the Name Chautauqua," of which he says, "All the information above was obtained from J. N. B. Hewitt, in Washington, D.C.," but I may be permitted to add a few words on this and other names. I may premise that I have a list of about 1,200 Indian names of places in New York, about half of which are either obsolete, or applied to places little known. Many local names can be obtained of the Indians on any reservation.

First, of pronunciation, in which Mr. Gatschet's informant differs from other authorities. It is a little too positive to say that "To spell it 'Chatakwa' would conform better to scientific orthography, for the first two syllables are both pronounced short." Having but accidentally used the name in conversation with my Onondaga friends, it is of little importance to say that they gave it the usual pronunciation, for I was simply trying to get its meaning. Others, who have given it attention, are quite decided on this point. Mr. O. H. Marshall was an acknowledged authority on local Indian names. In his "De Celoron's Expedition to the Ohio," he gives several forms. Among these, Alden wrote it as pronounced by the Seneca chief Cornplanter, "Chaud-daukwa." Mr. Marshall adds, "It is a Seneca name, and in the orthography of that nation, according to the system of the late Rev. Asher Wright, long a missionary among them, and a fluent speaker of their language, it would be written 'Jah-dah-gwah,' the first two vowels being long, and the last short." Mr. L. H.