settlements on the Chatahutchi River seem more recent than Kasi'hta and Kawita, and therefore it is probable that the Creek immigration to those parts came from the Coosa and Tallapoosa rivers.

The villages of the Creeks are built along the banks of rivers and brooks, frequently in places subject to inundations. They consisted of irregular clusters of houses. Each of these belonged to a gens, or clan, of which there were a great number, twenty of which are still in existence. Only the larger villages had a public square occupying a central position. This was reserved for the celebration of festivals, especially for that of the annual fast, which is the most prominent one among their feasts. On the square stood the council-house. The Creeks distinguished two kinds of towns, — the red or war town, and the white or peace towns. While the former were governed by warriors only, the latter had a civil government. One of the most noteworthy of the peace towns was Apalatchukla. It was considered the mother town of the Creek confederacy. No captives were put to death, no human blood was spilled there. Deputies from all Creek towns assembled there when a general peace was proposed. On the other hand, Kawita-Tallahassi, a few miles north of Apalatchukla, was an important war town. Here the chiefs and warriors assembled when a general war was proposed, and here captives and state malefactors were put to death.

Gatschet's researches on the ancient pathways are of particular interest. A detailed study of trails leading through the country forms an important part of Indian history and ethnography. But unfortunately only very few are traceable at the present time. He describes four trails leading from the eastern states to the Creek towns, crossing the Chatahutchi River by means of fords.

We cannot enter here upon the ethnographic and linguistic details contained in Gatschet's book, but confine ourselves to the foregoing remarks, which will be explanatory of part of the vast amount of information contained in the maps. It must be regretted that the publication of the second volume of Gatschet's work is delayed so long, as it will undoubtedly further our knowledge of North American ethnology as much as the first one has done.

PARIS LETTER.

M. Brown-Sequard has been elected president of the Société de biologie in place of the late Paul Bert.

The principal conversational topic of scientific interest at present is the particularly significant relationship existing between typhoid-fever extension and the quality of the water distributed in Paris. It is known that Paris receives its drinking-water from three principal sources: very pure and palatable water is furnished by two rivers whose waters are brought into Paris by means of aqueducts, namely, the Vanne and the Dhuys; second-rate water comes from the Ourcq River; finally, Seine and Marne water is, on account of its impurity, especially used for public purposes, — street cleaning and watering, fountains, etc. But, although the last water is generally not mixed with pure drinking-water, it often happens, especially in summer, that the Dhuys and Vanne do not furnish water enough, so that it becomes necessary to use Seine or Marne water. The consequence is, that, some time after this mingling of the pure with the impure water, typhoid-fever becomes much more prevalent. For instance: for seven weeks during which pure water is distributed in the whole of Paris (May 3–June 16), the number of typhoid-fever cases applying to the hospitals is 149. From June 9 to June 20 the Seine water is mingled with that of the Dhuys and the Vanne. During the seven weeks from June 21 to Aug. 8, the cases are 472. The number of cases begins to increase between eighteen and thirty days after the admixture of the impure water. The same relationship exists in most epidemics of typhoid-fever, between the nature of the water-supply and the frequency of the disease. Another very significant fact is, that, in barracks where the water is good (Vanne water), the death-rate from typhoid-fever is only 0.7 per cent, while in barracks (although quite new and very healthy otherwise) where Marne water is used, the death-rate rises (from typhoid-fever alone) to 17 per cent. If these facts are confirmed, — and it is unlikely that they should not be so, since a recent investigator, M. Thoinot, has found the typhoid bacillus in great numbers in Seine water taken at the very place where it is pumped for the municipal reservoirs, — the Paris board of aldermen will have to give up using Seine water, and will be compelled to secure pure drinking-water elsewhere, if it does not wish to be called, with just reason, a cold-blooded murderer, which it seems to be at present. Such a state of things is a shame to a city like Paris, and in an age of science like that in which we live.

The senate committee for the abatement of alcoholism in France has just reported, and proposes that all non-ethylic alcohols shall be excluded from wines and liquors, as they are poisonous. This is very well, but will it be very easy to devise an instrument or a chemical method for the discovery of non-ethylic alcohol in wine or spirits?

The Paris academy of medicine is going to discuss, some time hence, the question of mental overwork; and the results of these discussions,

if carefully prepared and well backed by good documents, will certainly prove most interesting. The evil effects of overwork must certainly be enormous in France, not only from the mental point of view, but also as concerns the influence on physical development; all the more so that gymnastics and sports are not enough sought for and cultivated to counteract the bad effects of mental strain.

M. Levasseur, of the Académie des sciences morales et politiques, has recently published a paper concerning the average length of life in France at the present day and a century ago, in 1789 and 1881. The following table summarizes the data for different periods of life, the numbers indicating the ratios of survivors per thousand: —

Age.	Before 1789.	1877–81.	
	Both sexes.	Male.	Female.
5	583	716	744
10	551	693	719
15	529	680	703
25	471	631	657
35	404	574	596
45	334	512	539
55	257	433	470
65	166	320	362
70	118	245	291
75	72	161	199

The following table summarizes the ratio of average life length in France, England, Belgium, and Norway, calculated for a thousand infants of both sexes: —

Age.	France.	England.	Belgium.	Norway.
10	681	703	689	780
20	642	663	635	742
30	584	604	573	691
40	533	539	511	635
50	473	464	440	570
60	289	370	315	486
70	249	238	216	349
80	89	89	75	157
90	11	11	9	26

It will be easily perceived that the average length of life has increased greatly since a century ago in France, and that it stands generally on a par with that of England, being superior to that of Belgium, but inferior to that of Norway. The pre-eminence of Norway is due not only to the low death-rate of infants, but to that of all ages of life. Other tables show that life is generally longer in females than in males.

M. Armauer Hansen, whose works concerning leprosy are well known, has recently published an interesting paper concerning septicaemia in whales. Near Bergen, each year, one or two Balaenoptera rostrata are regularly caught. The way in which it is done is very simple. The small bay into which the whale has come is shut by means of a net, — this is quite enough to prevent the egress of the animal, — and then the fishermen try to harpoon it. The animal belongs to the fisherman whose arrow or spear has proved fatal. The fatal wound is recognized easily by the fact that all around it there is a zone of mortification some days afterwards. The animal does not die immediately. Some twenty-four or thirty-six hours after the wounds have been inflicted, the animal, which continues roaming about in the bay, seems sick: it comes oftener to the surface to breathe, and is less rapid in its movements. It is then harpooned and hauled ashore. One of the wounds, as before mentioned, is found to be surrounded by a zone of mortified tissues. All the fishermen then dip their arrows and spears into the wound to poison them. In fact, the whales are killed by septicaemia, for both Hansen and Gade have found in the wound a quantity of bacilli, always the same. Cultures of these bacilli succeed very well, and now inoculations upon rabbits are going to be tried. The curious feature of this fact is that this method of whale-capturing has been in vogue for many thousand years, since the epoch of the vikings.

Many interesting books have been published since my last letter. Professor Frèdèricq of Liege has published the first volume of the annals of his laboratory. It contains many interesting papers by the able young physiologist and many other scientists.

Professor Hayem has issued a volume on the great therapeutical methods. It is a useful book, in which the philosophy of therapeutics is well expounded. M. G. de Kerville has published a book on evolution. It is a popular but very satisfactory account of the basis of evolution, of the facts adduced in support thereof, and of the difficulties the great Darwinian theory encounters.

It would be useless to say a word in praise of the late Würtz's 'Biological chemistry,' which is now complete. This work is a very good one, clear and precise, as that regretted master always wrote.

V.

Paris, April 8.