— The appointment of Dr. J. H. Kidder assistant commissioner of fish and fisheries gives very general satisfaction. Dr. Kidder has devoted the recent years of his life to the work of the commission, which has been most valuable in its results. He is a profound student, and takes a deep interest in his work. The appointment is commended on all sides, and, should Dr. Kidder consent to remain in the commission, the government will secure a most faithful and efficient officer.

— A steam-catamaran, intended for whale and walrus hunting in the Arctic regions, is being built at Montreal, Canada. It has two steel cigar-shaped hulls, each sixty-five feet long, and built in two compartments, one for water ballast, and the other to carry petroleum for fuel. The catamaran is constructed so that it may be taken apart for transportation on the deck of a whaler.

— About a year ago the steamer 'Gluckauf,' the first vessel specially constructed for the transportation of petroleum in bulk across the Atlantic, was described in *Science*. A year's trial has convinced the leading oil-exporters that the new method of shipment is far more economical and expeditious than the old system of transportation in casks and cases, and as a result several tank vessels are now being built in England to ply between New York and the different European ports. The fact that Russia is shipping petroleum in bulk from Batoum, on the Black Sea, direct to Europe and India, has perhaps hastened the adoption of the bulk system by the American exporters.

— Seventeen steel canoes form part of the equipment of the Nicaragua Canal Company's surveying parties, which sail from this city in a few days. The canoes are built of galvanized steel one-twentieth of an inch thick, and are intended for the transportation of the different parties to their stations along the route of the canal, as well as to facilitate the making of the surveys.

LETTERS TO THE EDITOR.

**** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

Eskimo and the Indian.

THE subject of past relations between the Indian and the Eskimo must, in the light of recent investigations into the origin and migrations of the latter, become intensely interesting. In the issue of *Science* for Sept. 2, I gave an instance or two of what seemed to be loan-words from the Indian to the Eskimo. These concerned only the Central Eskimo. I have since succeeded in tracing these words throughout the Eskimo territory from Labrador to Siberia, as follows: —

Labrador	*niptar-pok* ('foggy')
Hudson Bay	*nepewoke* ('sunset')
Churchill River	*nipalukuni* ('to rain')
" "	*nipa* ('dead')
Mackenzie River	*nipaluk* ('rain')
" "	*nipaluk-toark* ('to rain')
" "	*nipta-toark* ('moon's quarter')
" "	*nipi-york* ('sunset')
" "	*nipi-yoark* ('to set,' of stars)
Tschuakkak Island	*niptschuku* ('rain')
Malemute	*niptiga* ('night')
Tchuktschi of Anadyr	*neptschuk* ('rain')

With these I would compare the following: —

Miami	*nipanoue* ('cold')
"	*nepeh* ('water')
Penobscot	*nipongi* ('night')
"	*neebunst* ('moon')
Chippeway	*nip* ('I die')
"	*nibi* ('water')
Cree	*nipiw* ('dead')
"	*nipiy* ('water')
Algonkin	*nipa* ('die')
"	*nipouin* ('death')
"	*nipan* ('sleep')
Lenape	*nipaoni* ('by night')
Massachusetts	*nepaushadt* ('moon')
"	*nippe* ('water')
Narragansett	*nippitchewo* ('die')
"	*nip* ('water')
"	*nepouckttowt* ('kill')
Minsi	*nipahump* ('moon')
"	*nibi* ('water')
Montauk	*neepa* ('moon')
"	*nip* ('water')
Mohawk	*nup* ('die')
"	*nibey* ('water')

and elsewhere throughout the great Algonkin stock of languages. Now, if we adopt the view of Mr. Horatio Hale, that the primitive seat of the Huron-Algonkin-Cherokee family was "*on the banks of the St. Lawrence*," and that of Dr. Franz Boas, that the primitive seat of the Eskimo race was "*in the west of the Hudson Bay region*," have we not an explanation for the coincidences noted above, and may we not expect more as research progresses? Dr. Rink, in his 'Eskimo Tales and Legends,' tells us of a journey made ages ago, by the Eskimo, in search of copper, to a southern country and people. Now, the word for 'copper' in the Eskimo dialects is *Kanooyak* (Hudson Bay), *Kannoyark* (Mackenzie River), *Kannujak* (Unalashka), *Kanuja* (Kadiak), *Kanujak, Kennijak* (Tchugazz), and it is interesting to find that in Mohawk the word for 'copper' is *quennies*, and in Iroquois *kanadzia*. Did the Eskimo borrow this word from the Iroquois, or did both borrow it from a people with whom they both must have come into contact, the copper-using mound-builder of the Ohio and Mississippi valleys?

The following short list of words common to the Eskimo and more southern tribes of American aborigines may serve to strengthen the views advanced by Dr. Boas and Mr. Hale: —

Above	*ehneken* (Iroquois) *innyak* (Unalashka, 'sky')
Bone	*onna* (Huron) *hrownik* (Hudson Bay)
Brother	*haenyeha* (Huron) *anaga* (Kadiak) *anayva* (Mackenzie River) *jattatege* (Onondaga) *agituda* (Aleutan)
Child	*cheahhah* (Huron) *iyaye* (Mackenzie River)
Copper	*quennies* (Mohawk) *kanadzia* (Iroquois) *kannooyak* (Hudson Bay)
Day	*ennisera* (Iroquois) *eghnisera* (Mohawk) *aghynak* (Tchuktschi) *annehak* (Unalashka) *anyark* (Mackenzie River)
Do	*konnis* (Iroquois) *tchene-yoark* (Mackenzie River)
Duck	*soluck* (Mohawk) *tchorlerk* (Mackenzie River)
Ear	*suntunke* (Nottoway) *tschintak* (Tchuktschi)
Father	*aitaa* (Huron) *ata* (Tuscarora) *atta* (Tchuktschi)
Fingers	*ayinga* (Huron) *aihanka* (Tchuktschi)
Fire	*yoneks* (Tuscarora) *oonoktook* (Hudson Bay, 'to burn')
Foot	*achita* (Huron) *ochaita* (Onondaga) *etscheak* (Kotzebue Sound) *akseit* (Greenland, 'hand')
Good	*ioyanere* (Iroquois) *ayunitork* (Mackenzie River)
Hand	*chotta* (Iroquois) *esket* (Kadiak) *tshax* (Aleutan)
Head	*noatsshera* (Huron) *naschko* (Tchuktschi)
Lip	*hechkwaa* (Iroquois) *kakkairar* (Mackenzie River)
Man	*eniha* (Nottoway) *aneehah* (Tuscarora) *innuk* (Greenland) *innuk* (Mackenzie River) *aingahon* (Huron) *oonquich* (Mohawk) *angut* (Greenland) *angut* (Hudson Bay)
Mother	*anehah* (Huron) *eanuh* (Tuscarora) *ana* (Nottoway) *anaha* (Kadiak) *annak* (Unalashka) *anaan* (Aleutan)
Nose	*yaunga* (Huron) *chinga* (Tchuktschi)
Red	*quechtaha* (Seneca) *kawachtuk* (Tchuktschi)
Snow	*onyeiak* (Seneca) *ouniyeghte* (Mohawk) *annu, annju* (Tchuktschi)
Tongue	*ennasa* (Iroquois) *ahnak* (Unalashka)
Winter	*oxhey* (Huron) *ukshiok* (Kadiak) *uktschuk* (Tchuktschi)
Woman	*ekening* (Tuscarora) *aganak* (Kadiak) *aganak* (Tchuktschi)

I have also found resemblances no less remarkable between the Eskimo and the Cherokee-Choctaw, as well as the Tlingit and the

languages of British Columbia. All this, it seems to me, argues in favor of the indigenous, American origin of the Eskimo.

A. F. CHAMBERLAIN.

University College, Toronto, Nov. 12.

IT seems to me that the similarities of sound mentioned in Mr. Chamberlain's letter cannot be admitted as evidence of a connection between the Eskimo and other American languages. The Eskimo words which he classes together are derivatives of entirely different stems, that cannot be traced to a common root. In the first table we recognize the following stems: *nipta-* ('clear weather'), *nipig-* ('to stick'), *nipag-* ('to vanish'). Under the heading *man* the words *inuk* and *angut* are classed together, although they have no connection whatever. In comparing languages, complicated derivatives must not be used, but the words must first be traced to their stems, and the meaning of the stems must be ascertained as well as the phonetic laws obtaining in the dialects of the stock, before it is possible to make a satisfactory comparison. Fortuitous coincidences of sound like those given by Chamberlain cannot be admitted as evidence of relationship. F. BOAS.

New York, Nov. 25.

Rate of Change in American Languages.

THE letter of Dr. Beauchamp (*Science*, Nov. 18) opens an interesting linguistic question. My own impression is that the rapidity of changes in unwritten, at least American, languages has been overestimated.

Sagard, in the preface to his 'Dictionnaire de la Langue Huronne' (Paris, 1632), asserted that the Huron was constantly changing, so that in a generation or two it would seem like a new language. Two hundred years afterwards, Duponceau took Sagard's very imperfect book, tried it on some intelligent Hurons, and found that "the language had not undergone any essential change" (*Mémoire sur les Langues de l'Amérique du Nord*, pp. 444, 445).

In 1578 Jean de Lery printed his 'Histoire d'un Voyage faict en la terre du Bresil,' containing long conversations in Tupi. Three hundred years later, Dr. Nogueira republished these conversations, with their equivalents in modern Tupi. The differences are surprisingly small, — with proper allowances for dialect and varying phonetics, scarcely more than between Lery's French and the French of to-day (see NOGUEIRA, *Apontamentos sobre o Abañeenga ou Lingua Geral dos Brasis, Rio de Janeiro*, 1876).

I have recently completed a comparison between the Alagüilac of Guatemala, which is the most southern dialect known of the Nahuatl, by means of a vocabulary obtained in 1878, with that tongue as spoken in the valley of Mexico in 1550, preserved in the 'Vocabulario' of Molina. The separation of the two peoples could not have been less than four hundred years; but the divergencies are so slight that I could easily have believed the Alagüilac words to have been obtained by a German (my informant was of that nationality) in ancient Tezcuco.

Dr. Beauchamp, in referring to conflicting orthographies of the same word, points out a real but not the only cause of apparent without actual change in these tongues. He also touches on the confusion liable to occur from the natives forming diverse figurative compounds to express objects and ideas new to them. I was struck with this lately in comparing the expressions in the Lenâpé for 'faith,' 'regeneration,' 'repentance,' and such theological terms, as introduced, on the one hand, by the Moravian missionaries, and, on the other, independently, by the Anglican Church. They are usually totally dissimilar.

But a much more curious and important law underlies the apparent variability of many American tongues. I refer to that of 'alternating consonants' and 'permutable vowels.' In a number of these languages it is entirely optional with the speaker to articulate any one of three or four consonantal sounds for the same phonetic element. For example: he may at will pronounce the syllable *ton* either thus, or *lon, nol, rot*, etc., alternating the elements *l, n, r, t*, at will. I have little doubt but that something of the same kind obtained in ancient Accadian, which will explain why the same cuneiform character stands indiscriminately for the sounds *ku, tus, pun*, and *dur*; and the recent researches of Dr. Carl Abel on the phonetic modifications of the ancient Coptic radicals hint strongly at the prevalence of this peculiarity in that venerable speech.

In America, I name as special examples of this the Klamath and the Chapanec. But that these phonetic variations are within fixed limits, and do not involve the integrity of the language, is curiously proved by the last mentioned. Remesal, the early ecclesiastical historian of Chiapas, states that the Chapanec was introduced into that department from Nicaragua many generations before the Conquest; probably it was not later than the year 1300. Now, in 1872, my late friend, Dr. C. H. Berendt, collected in Nicaragua, from a few old Indians, the only survivors of their tribe who spoke its tongue, a number of words and phrases of a dialect called the 'Mangue.' A comparison proves it to have been beyond question a very close relative of the Chapanec, essentially the same in fact, though separated from it for more than five hundred years (see an article on the Mangue by me in the *Proceedings of the American Philosophical Society*, 1885).

As in the Turanian tongues, the Turkish, for example, there is a 'vocalic echo,' the leading vowel of the word forcing the others to assimilate to it in sound, so in some American tongues there is a 'consonantal echo,' the presence of one consonantal sound requiring more or less changes in the others. The Tupi, the Chapanec, and the Klamath offer examples of the 'consonantal echo,' while a certain degree of the 'vocalic echo' is observable in the Kiche and Cakchiquel.

These phonetic laws must be thoroughly understood and allowed for, before any one pronounces positively on the rate of change in American languages. DR. D. G. BRINTON.

Media, Penn., Nov. 23.

Amnesia.

THE cases cited in *Science* (Nov. 11, 18, pp. 232, 250) remind me of the following. Some twenty-seven years ago, a neighbor of mine (a young man of twenty-five or under), springing from the vaulting-horse in a gymnasium to catch the trapeze, fell, striking apparently upon his shoulders, and was taken up insensible. Consciousness soon returned, perhaps in a fraction of an hour, but there was no recollection of the few hours just previous to the fall. As recovery progressed, however, it was said that his recollections came down closer and closer to the time of the accident; and that in a week or less he could even remember taking the leap, though not his striking the mattress.

Whether it be common that the progress of recovery should thus lessen the period covered by the amnesia, might no doubt be learned from such data as many professional athletes could furnish. An athlete once told me how, some years before, he had fallen on his forehead in the circus, and had been taken up for dead. His recovery, I think, had taken several months. He could remember, not indeed the blow, but the sense of powerlessness with which, in mid-air, he had realized that "his balance was lost." But perhaps he did not say whether, a few hours or weeks after the accident, his recollections had come down so far. J. E. OLIVER.

Cornell University, Nov. 18.

THE cases of amnesia mentioned in *Science* of Nov. 18 recall in my own experience cases which may be of sufficient interest to be recorded.

When about fifteen years old, I went into a stable to stanchion cows for milking. About an hour afterwards I was found wandering about the yard unconscious, and bleeding profusely from wounds in the face. I have not been able to this day to tell how I was hurt. I have no recollection, beyond going into the stable and fastening a few cows. My hat was found under the cattle's feet. My front teeth were loosened, a hole cut through my lip, and my shoulder in front badly bruised. I was feeling well at the time, and have never fainted, and cannot refer the injury to that cause. The nature of the injury would indicate that it came from the front, and must have appealed to my senses in their normal state.

From other experiences I have always believed that it is more common to remember the cause of an injury producing temporary unconsciousness than to forget it. I became unconscious once from drowning, but remembered vividly every thing when restored. I was once prostrated by lightning, but remember having seen the flash.

I think one's remembering the cause of an injury depends largely