

tules; as no result followed he himself vaccinated three of them without the consent or knowledge of their parents. He used a table knife for the purpose, making the incisions on the back of the hand, between the thumb and the forefinger. The operation was successful, and a year later, when the other children of the family suffered from small-pox, the three who had been vaccinated by Plett remained free from the disease. There appears to be no record of his having performed other vaccinations.

GINN & Co. announce '*Chemical Experiments—General and Analytical*,' by R. P. Williams, instructor in chemistry in the English High School, Boston. The book contains 100 sets of illustrative experiments, about one-half in general chemistry and one-half in metal and acid analysis.

THE Fifth International Congress for combatting the abuse of alcohol met at Bâle on August 20th, 21st and 23d. The president, M. Heemskirk, the Dutch Minister of State, opened the proceedings by a brief survey of the progress made since the last Congress held at the Hague in 1893. Papers on physiological and psychological effects of alcohol were read and discussed, including an elaborate paper on the effects of different kinds of alcoholic beverages by Dr. Lancelot, delegate of the French Minister of Public Instruction. The second day was devoted to the various anti-alcoholic organizations throughout Europe. On the third day the principal paper discussed the effect of alcoholic abuse in fostering crime. The majority of the members favored total abstinence. Brussels was decided upon as the place of meeting in 1896.

DURING the past ten years the extinction of wolves in France has proceeded rapidly. One hundred and eighty thousand francs were expended by the government in 1894 for the destruction of wolves. In 1895 the total reported is only 2,500 francs. The

official reports state that there are now 55 departments where the presence of wolves is very rare.

It is stated that the report of the death of M. Lucien Bonaparte Wyse is incorrect, his name having been substituted for that of his brother, M. Napoleon Alfred Wyse.

At the last meeting of the Council of Manchester Museum, Owens' College, as reported in *The Lancet*, the library committee recommended that a grant of £400 per annum be made on condition that the Lancashire and Cheshire County Councils and the local district councils gave £800 a year. As an amendment it was proposed that the £400 should in any case be given.

CORRESPONDENCE.

WINDS AND OCEAN CURRENTS.

THE article by Mr. Bache in a recent number of SCIENCE on the causes of the Gulf Stream brings up a number of points on which other opinions than those which he advocates may be fairly maintained. Some of these points have been indicated by Prof. Le Conte (SCIENCE, Aug. 16). The scheme of a northeast surface movement and southwest subsurface return of an oceanic circulation in the northern hemisphere, if uninterrupted by continents, is essentially a return to the untenable view advocated by Dove in his theory of atmospheric circulation; now displaced by Ferrel's much more satisfactory theory. The deducible circulation of the ocean, under convectional control alone, whether interrupted by continents or not, has been best stated by Ferrel, especially in several articles in SCIENCE, first series, 1886 or 1887; my file is not now at hand for precise reference.

While there is good reason to believe that the difference of density of the equatorial and polar waters produces a slow convectional circulation of the ocean, and is responsible for the low temperature of the great body of the torrid oceans, there is also good reason for thinking that the comparatively rapid and notably systematic, eddy-like circulation of the surface waters in the several oceans is determined essentially by the winds. The argu-

ments for the wind theory, as generally stated, are first, the general accordance of prevailing winds and associated currents; each ocean having its wind eddy only less marked than its current eddy. Second, the periodic variation of the currents in regions of monsoon winds; the type example of this kind being in the Indian Ocean, where, as even Dampier noted two hundred years ago, the currents shift about a month after the winds. Third, the irregular movements of the surface waters under storm winds, which suffice in a day or two to deflect or even to reverse the surface layers of so strong a current as the Gulf Stream off Hatteras. To these facts may be added the hardly less significant behavior of the equatorial counter currents, which increase in area and strength on that side of the equator to which the trade wind from the other hemisphere crosses over as a deflected, monsoon-like wind; the monsoon currents of the Indian Ocean being only special cases of this general rule. The greater velocity of the North Atlantic drift ('North connecting current' in the objectional terminology of the school atlases) in winter than in summer may also be mentioned as a fact best explained by the wind theory. There is nothing about the Gulf Stream so peculiar as to exempt it from the general control exercised by the winds over the waters.

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CORRECTIONS.

EDITOR OF SCIENCE: The fate of my review of Beddard's Zoogeography furnishes another illustration of the dangers which an author is subject to in his path to publication. In the proof (of which I have a duplicate at hand), Nearctic and *Osteolæmus* occur all right, but in the published article (altered after it passed through my hands) *Osteolæmus* is substituted for *Ostolæmus* and *Osteolæmus* for *Osteolæmus* and consequently there is no apparent point to the criticism made and no reason for the analogue euded. 'Upiform' on p. 273 (left column) should have been *pupiform*, and 'even' on p. 273 (right column) just before 'the same Hyracodon' should, of course, have been *event*. The *p* of *pupiform* and *t* of *event* were dropped after

transmission of the proof; 'molacologist' should have been corrected to *malacologist*.

I may add that Mr. Beddard spells the title of his volume Zoogeography (without *ö*) as I had written and corrected.

The reviewer of Beddard's work in 'Nature' (July 25, p. 289) is "at a loss to understand" "by what confusion of ideas the name *Hyracodon*, (which belongs to an extinct genus of rhinoceros-like animals) is made to do duty for *Didelphys*." *Hyracodon* of Tomes, as noted in the review in SCIENCE (p. 273) was published in 1863 and in the Proc. Zoöl. Soc. London (p. 50) and has remained unexplained to the present day. I have long been inclined to believe that it was based on a young *Didelphys*, although the meagre description does not apply to any stage I have seen (and I have seen many). I was surprised that it was not noticed in Mr. Thomas' excellent work on Marsupials. It seems, indeed, to have fallen quite flat, but was noticed by Murray in his geographical distribution of Mammals, and I presume that it is from Murray that Mr. Beddard has received the generic name. The homonymy of the names of Leidy and Tomes was, of course, a mere coincidence. The type of Tomes' genus (*Hyracodon fuliginosus*) was from 'Ecuador; collected by Mr. Fraser.' If it has not been lost, perhaps Mr. Thomas may find it and tell us what it is.

We may, perhaps, derive some comfort from the fact that the printers of your famous contemporary 'Nature' are by no means exempt from errors like those I now correct. Four lines before the reference to *Hyracodon* just cited, we find a reference to the 'Siberian hippopotamus;' the original copy of the review undoubtedly had *Liberian*. THEO. GILL.

WASHINGTON, Aug. 31, 1895.

[In the issue of SCIENCE for August 30, smaller type was for the first time used in part of the number. As is apt to happen in such cases there was a delay in the arrival of the type and the proof was late. Dr. Gill's corrections were sent to the printer, but the corrected proof was not seen by the editor. The errors are however such (presumably due to resetting part of the article) that it is better to offer apologies rather than excuses. J. McK. C.]