

public domain. Fortunately, the climate of southeastern Alaska is so humid that forest fires are rare and never very destructive, and reproduction is sure and rapid. These forests, therefore, even with American methods, will not soon or easily be destroyed; and here and to the southward, along the coast ranges and islands of British Columbia, through nine degrees of latitude from Cross Sound, at the north of Chicago Island, to the Straits of Fuca, is now the greatest continuous body of coniferous timber in the world, almost unmarked as yet by the axe, safe from fire and of easy access, from which the world will be able to draw great stores of material when the Redwoods and Douglas Spruces of the South have fallen, and the south-Atlantic and Gulf-shore pineries are only dim memories."

UNIVERSITY AND EDUCATIONAL NEWS.

THE attendance at the American colleges and universities will be larger this year than ever before. The numbers given at present are subject to revision, but nearly all institutions report the largest entrance classes ever recorded. At Harvard the Freshman class will be over 500. At Yale the academic Freshmen number about 350 (a slight decrease as compared with last year), and the Freshmen in the scientific department about 175. At Pennsylvania nearly 200 Freshmen were registered, about 35 more than last year. The entrance class at Princeton will number over 300.

THE colleges for women—Bryn Mawr, Vassar, Wellesley, Smith and others—also report an increased attendance. It is noteworthy that there are in the United States 139 colleges and universities exclusively for men and 162 exclusively for women.

IT is now stated that the estate of the late Henry M. Pierce will yield \$750,000 to each of the five legatees, which include Harvard University and Massachusetts Institute of Technology.

By the will of the late Dr. Antoine Ruppaner the Harvard Medical School will receive \$10,000, to be called the Dr. Ruppaner Fund.

MR. H. H. HUNNEWELL has given \$5,000 towards the endowment of the Surgical Laboratory of the Harvard Medical School.

THE Rev. Dr. Eliphalet Nott Potter, formerly

President of Union College and of Hobart College, has accepted the presidency of the Cosmopolitan 'University' (Correspondence School).

DR. HANS REUSCH, director of the geological survey of Norway, has been appointed for 1897-98 to the Sturgis-Hooper professorship of geology in Harvard University, left vacant since the death of Professor J. D. Whitney a year ago. Dr. Reusch will lecture on Vulcanism during the first half year, treating volcanoes and eruptive rocks in general; earthquakes and movements of the earth's crust. In the second half year he will lecture on the Geology of Northern Europe, and its relations to general geology. The third hour of each week will be set apart for seminary work. In the spring Professor Reusch proposes to take part in the instruction of advanced students in the field.

IN addition to a number of assistants, the following instructors have been appointed at the Massachusetts Institute of Technology: Carl H. Clark, S.B., in mechanical engineering; Frederick A. Hannah, S.B., in mechanical engineering; Charles M. Spofford, S.B., in civil engineering. The following promotions have also been made: Arthur A. Noyes, S.B., Ph.D., associate professor of organic chemistry; Frank A. Laws, S.B., assistant professor of electrical measurements; Harry M. Goodwin, S.B., Ph.D., assistant professor of physics.

DISCUSSION AND CORRESPONDENCE.

RESULTS FROM THE HIGHEST KITE FLIGHT.

TO THE EDITOR OF SCIENCE: Aided by a grant from the Hodgkins Fund of the Smithsonian Institution, the Blue Hill Observatory is endeavoring to obtain meteorological records in the free air at heights exceeding 10,000 feet, and on September 19th such records were obtained at the highest level which kites are known by the writer to have attained.

The flight in question was conducted without mishaps by my assistants, Messrs. Clayton, Fergusson and Sweetland. On the day mentioned, the sky was clear and the wind blew from the south in gusts of from 20 to 35 miles an hour. The Richard baro-thermo-hygrograph, which weighs three pounds and was suspended 130 feet below two large kites of Mr.

Hargrave's form but of Mr. Clayton's construction, left the top of Blue Hill at noon. Similar smaller kites were attached to the main wire at intervals, so that the 20,670 feet of wire unreeled, which weighed 59 pounds, were sustained in the air by seven kites, having a total lifting surface of 213 square feet. Angular measurements at the windlass of the meteorograph enabled its height to be determined at definite times. The greatest height was reached at 4:17 p. m., when the meteorograph was 9,255 feet above Blue Hill, or 9,885 feet above the neighboring ocean. The meteorograph remained more than a mile above the sea during five hours. The reeling-in by means of the steam windlass occupied about two hours, and at 6:40 p. m. the meteorograph returned to the ground.

The automatic records were found to be smooth and distinct, with the exception of a portion of the barometer and hygrometer traces which was lost, owing, perhaps, to the temporary drying of the ink in the pens. The altitudes given by the barograph agreed closely with those computed from the angular measurements, showing that the barometric heights were nearly correct for the mean temperature encountered. The thermograph showed the lowest temperature to have been 38° at 9,255 feet above the hill, whereas on the hill at the same time the temperature was 63°, giving a mean decrease of only 1° for each 370 feet of ascent. The relative humidity varied greatly with altitude, although on the Hill it remained near 50 per cent. of saturation during the first half of the flight, increasing to about 80 per cent. at the end. Up to approximately 3,000 feet above sea-level the relative humidity increased, proving the existence of an invisible vapor stratum near the level of the cumulus cloud level. Higher it suddenly decreased, but increased to over 80 per cent. at the height of a mile, indicating the level of the alto-cumulus clouds. Above 8,000 feet the humidity was very low and probably less than 30 per cent. of saturation. The wind veered to west as the kites rose and became steadier, although its velocity was probably greater than near the hill top, since the pull on the windlass, which was counteracted in part by the weight of the

suspended wire, exceeded 150 pounds when all the kites were high in the air.

A. LAWRENCE ROTCH.

BLUE HILL METEOROLOGICAL OBSERVATORY.

September 27, 1897.

'THE PRESENT EVOLUTION OF MAN.'

THE discussion of my review of his work, which is given by Mr. Archdall Reid on pp. 368-372 of your issue of September 3d, deserves some sort of reply. Yet I write with some reluctance, because I can only make such comments as must already have suggested themselves to many readers, without attempting an adequate treatment of the matters in dispute, which would require a book.

As regards Mr. Reid's theory of retrogression, I certainly have to say that I think it is wrong. The general statement 'that the ontogeny recapitulates the phylogeny' was a brilliant generalization when first made, and within reasonable limits accorded with the facts. But surely it has since been made a fetish of, and the version of it accepted in some quarters reminds one of the not uncommon popular notion that all animals are descended from one another in a direct line! According to Mr. Reid's view, I do not quite see how a female can transmit male characters, or *vice versa*, as undoubtedly occurs. If, for example, the beard is a comparatively new character, a woman, having no beard, is so far atavistic. Yet that beardless woman will have bearded male offspring, independently of the hairiness of the father. But if such illustrations are objected to as being different from those intended by Mr. Reid, we may take the case of a seasonally dimorphic butterfly, which alternately loses and gains a set of characters. Here we have a series ABABAB, etc. If A is the oldest phase, then B reverts to A, and the opposite process should not be possible. When we contemplate the primary and secondary sexual characters and all the phenomena of dimorphism and polymorphism, I do not see how we can avoid the conclusion that germinal selection is a reality. At all events, the writer, after carefully reconsidering the matter in the light of Mr. Reid's new statement, is more than ever convinced of the validity of his former argument.