

Meteorological Factors and Forest Fires in the United States.

FOREST fires have long been a source of damage and loss in North America, and for many years the U.S. Department of Agriculture, by the aid of the Forest Service and the Weather Bureau, has sought, so far as possible, to mitigate the amount of havoc by fire control. Necessarily immense difficulties harass the work in many ways, but without doubt the unceasing care and activity of those engaged is telling in its results. A prime feature in the discussion is the forecasting of fire-weather with the object of avoiding the fires or competing with them when necessary. The U.S. *Monthly Weather Review* for the past two years contains many varied articles on the subject, written from different points of view. Only the merest reference can be made to them here in the space available. Occasional articles have appeared for at least ten or twelve years connecting the forest fires with lightning, but it is only in the last two years—1922 and 1923—that the communications have become so frequent and widespread. In 1923 there were at least 12 communications, 7 of which occur in the November number. It is almost invidious to single out those by special authors—all of which are either attached to the Forest Service or the Weather Bureau.

In the *Monthly Weather Review* for March 1921, Mr. E. N. Munns of the Californian Forest Service endeavours to correlate evaporation and forest fires, associating evaporation with temperature, humidity, and wind. In the issue for February 1922, "Climate and Forest Fires in Montana and Northern Idaho, 1909 to 1919," is dealt with by Mr. J. A. Larsen, Forest Examiner, and Mr. C. C. Delavan, Fire-assistant. During the eleven years nearly 5,000,000 acres of land were burned over in this district, with a damage to standing timber estimated at 28 million dollars, and an outlay in fire prevention and suppression of about four and one-half million dollars. Diagrams are given showing for seven sections of the district the average area per fire for each of the

eleven years and the mean for the whole period. The years 1910 and 1919 stand out as experiencing the most disastrous fires. The outstanding causes of forest fires appear to be lightning, railroads, campers, and slash burning, of which lightning is the cause of the greatest number; some sections are said to have few fires from any cause except lightning. Sunshine, wind movement and moisture deficit are much above the average in years of bad forest fires, and there are other meteorological elements which afford very critical weather for forest fires. There is a general belief that forecasts of fire-weather conditions would be invaluable if they could be made sufficiently accurate and localised to be trustworthy.

"The Occurrence of Lightning Storms in Relation to Forest Fires in California" is dealt with in the *Monthly Weather Review* for April 1923, by Mr. S. B. Show and Mr. E. I. Kotok, Forest Examiners. It is asserted that lightning has been proved to be the principal single cause of forest fires in California and throughout the West. In the national forest of California during the years 1911-20 lightning has been responsible for 4363 out of a total of 10,527 fires, or 41.5 per cent. Further study of the storms involving lightning is strongly advocated; 89 per cent. of the lightning fires occur in June, July, and August. Among the number of articles in the *Monthly Weather Review* for November 1923, Mr. H. H. Weidman of the U.S. Forest Service mentions that if the forester knows the different degrees of inflammability of the fuel in terms of differences in its moisture content, it is possible for him to state definitely for to-morrow or the next day what influence the approaching weather will have in making it wetter or drier.

The cause of thunderstorms is now better understood, and with our increased knowledge of the upper air, the knowledge of thunderstorms will be still further advanced and better warnings will be disseminated.

An Analysis of the Jewish Race.¹

By Dr. R. N. SALAMAN.

THE Jewish communities of the world constitute no pure race, and in their features and physical characteristics represent no single uniform or even average type. An examination into the origins of the Jewish people offers an ample explanation of this diversity of appearance.

The Jewish people to-day are grouped into two stocks, the Ashkenazic and the Sephardic. The first comprises the Jews of Russia, Central Europe, Western Europe, and England; the latter is made up of the Spanish and Portuguese Jews and the Jews of Asia Minor, Egypt, and Arabia. Both groups derive directly from the common source in Palestine and Mesopotamia which, taking different paths in the diaspora, met with different fates. This paper deals with the Ashkenazic, partly because they are the more accessible, but chiefly because in the writer's view they have been far less subject to local intermarriage during their sojournings.

The origin and composition of the Jewish mass up to the first century of this era may be very briefly described as follows: The Abraham family were of a tribe, the Ibri, whom the Egyptians knew as Habiru. These were nomadic Semites equivalent to Bedouins. On their return to Palestine they met, conquered, and

amalgamated with the Amorites and the Hittites. The monuments as well as philological evidences show that the former were Semites and in appearance not to be distinguished from the Habirus. The Hittites were a people the governing class of which at least were entirely different from both the Amorite and Hebrew and are to-day represented by the Armenians.

Later the Israelites, now a mixed race of Semite and Armenoid origin, took into their midst a third people, the Philistines, a typical Mediterranean race. The Semitic Amorite and Habiru were essentially tall, long-headed people with sloping narrow brow, long face, a long, straight, broad nose with large nostrils, big mouth and heavy, large lips. The characteristics of their facial features are length and heaviness. The Hittite was of medium height, thick build, round-headed, often with a very high, flattened occiput. The features are characterised by their extreme roundness—a large, rounded, hooked, "Jewish" nose, the angles of the face and jaw likewise rounded, the mouth neither large nor the lips coarse.

The Philistines were represented on the walls of Karnak, as their progenitors were on the frescoes of Crete, as a small, delicately built people with long head, very refined clear-cut features, small nose often retroussé, small mouth and refined lips. A facial type characterised by the fine chiselling of the features,

¹ Synopsis of a paper read before the Royal Anthropological Institute on April 15.

the straightness of the nose and brow, the squareness of the nasal outline, and the frontal temporal region: the features are, in a word, short, square, and light.

All the characters grouped together under each of the three racial types, Semite, Hittite, and Philistine, do not pass as a single unit in heredity. The analysis of modern Jewry shows that the characters which make for "roundedness" as opposed to that of "squareness" as well as of length and heaviness as opposed to either, are inherited as simple characters in a Mendelian manner. The results obtained by following the matings of these types show that the rounded Armenoid type of face is dominant to the small, squared Philistine type, and that the heterozygous form may be often as extreme as the pure Armenoid, though generally it is less so. The Semitic long and heavy type is certainly recessive to the Armenoid, and probably so to the Philistine, but the evidence is scanty in this latter case. The Philistine type breeds pure when mated like to like; the Armenoid likewise, if one or both parents are homozygous, failing which it may split into rounded and squared types as 3:1. When the Armenoid Jew is mated to the non-Jew the result is exactly the reverse of that recorded for the mating Philistine \times Armenoid. The Gentile (Western European) type is dominant.

Although the Philistine type of face is often identical in appearance with the Western European, nevertheless it is genetically entirely different. In other words, the straight, short, squared features of the Western European are induced by a different chromosomal mechanism from that which induces the like character in the Philistine—the two peoples are then essentially different in origin. The diversity of the Jewish type and its frequent similarity to that of the people of Western Europe receives ample explanation from the kaleidoscopic rearrangements of the original elements which went to compose the Jewish Race before 500 B.C.

The Experimental Explosions in France.

THE arrangements for the experimental explosions next month in France (*NATURE*, vol. 113, p. 135) are now practically complete.¹ They will be carried out by the military services, though details as to time, etc., have been settled by a committee on which various scientific bodies are represented. There are to be three main explosions, in each of which rather more than ten tons of explosives will be fired on the surface of the ground. The site of the experiments is to be the neighbourhood of La Courtine, about forty miles west of Clermont-Ferrand, and the explosions will be made at three different points about one-third of a mile apart, the centre of the triangle formed by them being in lat. $45^{\circ}44'8''$ N., long. $2^{\circ}14'7''$ E. The times have been chosen so that the experiments may be made under different meteorological conditions, the first on May 15 at about 19 h. 30 m. civil time, the second on May 23 at 20 h., and the last on May 25 at 9 h.

Arrangements have been made for the help of observers distributed along the eight principal azimuths from the origin, and they will no doubt be assisted by a very large number of voluntary observers. The most important element is, of course, the time at which the sound is heard, and for this purpose it is suggested that observers should regulate their watches by the hourly signals from the Eiffel Tower. While the ear is a very sensitive receiver

¹ The conditions of the experiment are described by M. G. Bigourdan in *Comptes rendus* of the Paris Academy of Sciences, vol. 178, 1924, pp. 25-28, and by Prof. C. Maurain in *La Nature* for March 22.

and good observations may be made by hearing alone, a simple form of stethoscope would enable the sound to be heard at very great distances. The details which it is suggested that observers should notice are the time as exactly as possible, the apparent direction of the sound both horizontally and vertically, the intensity of the sound according to an arbitrary scale, and also the movement of windows, etc., the nature of the sound whether single, double, rolling, etc., and the meteorological conditions at the time. The earth-waves, it is expected, will be registered at considerable distances from the source, and their records will no doubt add to or confirm our knowledge of the velocities of condensational and distortional waves in the superficial layers (*NATURE*, vol. 111, p. 585).

If not too late, one or two other points may be suggested as worthy of close attention. Except near the source the air-waves that shake windows are usually different from the sound-waves and near the ground travel with a slightly less velocity (*NATURE*, vol. 112, p. 602). They seem to take a lower course in crossing the silent zone and in the outer sound-area they precede the sound. It is desirable that the relative order of the sound-waves and the rattling of windows, and the interval between them, should be observed at all distances. In the case of double or multiple reports being heard, the intervals between them and the order of intensity should be recorded. Many of the previous observations of multiple reports are vitiated by the doubt as to the singleness of the original explosion.

C. DAVIDSON.

University and Educational Intelligence.

CAMBRIDGE.—Dr. E. Lloyd Jones, Downing College, has been re-appointed as demonstrator of medicine. The Linacre Lecture at St. John's College will be delivered by Sir Charles Sherrington, president of the Royal Society and honorary fellow of Gonville and Caius College. The lecture will be at 5.15 P.M. on May 6 in the Anatomy School, and the subject will be "Problems of Muscular Receptivity."

GLASGOW.—The following degrees have been conferred:—*Ph.D. in the Faculty of Science*: P. F. Gordon, for a thesis entitled "The Separation of the Components of Petroleum"; and Mr. R. C. Smith, for a thesis entitled "Sintering." *Ph.D. in the Faculty of Arts*: Mr. I. L. G. Sutherland, for a thesis entitled "A Critical Examination of some Current Tendencies in the Theory of Human Conduct." *Ph.D. in the Faculty of Engineering*: Mr. D. S. Anderson, for a thesis entitled "The Evaporative Condenser. A Study of Heat Transmission by Film Evaporation"; and Mr. R. M. Brown, for a thesis entitled "Investigation into some of the Effects of Cold Drawing on the Properties of Iron and Steel."

MANCHESTER.—The extra-mural department of the University has arranged for summer courses of post-graduate study in mathematics to be held at University College, Bangor, from Monday, August 18, to Saturday, August 30. The courses are intended to afford facilities for advanced study in mathematics to teachers and others who are unable to attend courses during the regular University terms. Each course will consist of twenty lectures of one hour each, two lectures being taken on each of ten mornings. The following three alternative courses are proposed: (1) higher geometry, by Mr. H. W. Richmond (King's College, Cambridge); (2) theory of functions, by Prof. L. J. Mordell (University of Manchester);