government recently. The first two firms are English; the next four are French; the next two German and Austrian, and the next two American; the last is Russian:

	All round Price.	9 in.	8 in.	7 in.	6 in.	5 in.	4 in.
	£	£	£	£	£	£	£
Vickers, Sons, and Maxim	117	—	—	—	—	—	—
John Brown	115	—	—	—	—	—	—
St Chamond	—	98	99¼	—	—	108	110
Schneider et Cie	—	100	—	106	—	111	114
Chattillon	—	97¼	99¼	103½	—	113	—
Marrel Fieres	—	—	—	—	106¼	—	116½
F. Krupp, Essen	112½	—	—	—	—	—	—
Dillingen	112	—	—	—	—	—	—
Bethlehem Co.	106	—	—	—	—	—	—
Carnegie Co.	106	—	—	—	—	—	—
Witkowitz	90½	—	—	—	—	—	—

The highest figures are submitted by English firms. The American bidders offer the lowest terms tendered by makers whose work is well-known and of the highest existing quality. They received the last Russian contract at their own figures and in spite of the lower offers of the French and Russian firms and the close figures given by Krupp. No award is yet announced for the present tender.

FRENCH builders and users of 'motor cycles' are apparently more active and enthusiastic in that new field of enterprise than are those either of the other European nations or of the United States. Frequent reports of competitions in which high speed and long routes have been distinguishing characteristics come to us, from Paris, particularly, and in some cases the reported results are exceedingly interesting and suggestive. The 'Criterium des Motor Cycles,' from Étampes to Chartres and return, occurred early in the present month. The run was 100 kilometers. There were fifty-three entries, twenty-eight actually taking part in the contest. In fine weather, but in a strong wind, M. Leon Bollée made the run in 1 hr., 57 min., 49⅘ sec., his nearest competitor making the time 2 hrs., 20 min., 53⅗ sec. The winning vehicle had an 8 h. p. motor with two cylinders. The running speed of the victor was 51 kilometers (32 miles) an hour, unequalled by any road carriage to date, though closely approximated by steam-carriage makers sixty years ago in Great Britain. This speed is, of course, regarded as much too high for safety, on the excellent highways of France, even. The overloading of the carriage with power ruled out the motor-cycle of M. Bollée, as it was found to be in excess of the limit of weight; but this excess of power is considered by the builder to be justifiable for carriages intended to be employed in hilly countries.

R. H. THURSTON.

CURRENT NOTES ON PHYSIOGRAPHY.

PHYSICAL GEOGRAPHY OF NEW JERSEY.

THE Final Report of the State Geologist of New Jersey now reaches a fourth volume, which gives a serious discussion of the physical geography of the State by Salisbury. It replaces the first volume of this final series (now out of print), in which the topography of the State was described by Vermeule, and forms a valuable text for advanced students. After a general account of the physical features of the State, their origin is explained by means of successive cycles of erosion. The first erosion cycle developed the Schooley peneplain, now seen only in remnants on the even uplands of the Highlands, and in the long crestlines of Kittatinny mountain and of certain trap ridges. Next came the Cretaceous and Miocene submergences, separated by an erosion interval of small geographic import, and followed by the uplift which added the coastal plain to the State. An important cycle of erosion was thus introduced, during which a well-defined peneplain was developed on the weaker strata, leaving the harder as embossed ridges. A late submergence distributed the thin veneer of the

Pensauken gravels and sands over the drowned lowlands; and this was followed by an elevation in consequence of which the existing narrow valleys have been eroded in the 'pre-Pensauken peneplain.' The thoroughness of this volume only serves to emphasize the need of an elementary text, or series of brief explanatory tracts, that might go to the public schools along with the relief map of the State, already noticed in SCIENCE.

PHYSIOGRAPHIC TYPES.

THE first folio of the Topographic Atlas of the United States, published by the U. S. Geological Survey, is entitled Physiographic Types. It includes the maps of well-chosen typical regions, with explanatory text by H. Gannett. The Red River plain represents a young surface; the West Virginia plateau, a maturely dissected surface; the uplands of Kansas, an old surface, reduced nearly to a plain of denudation; Shasta is taken as a young volcano; Wisconsin affords examples of moraines and drumlins; the lower Mississippi gives the type of part of a flood-plain; Maine illustrates a drowned coast; and New Jersey, a sand-reefed coast. The policy indicated by the lucidity of the text that accompanies the geological folios is here well maintained. Great educational advantage must follow from it, not only in the better understanding of the Survey publications by their mature readers to-day, but even more in leading the younger generation towards a fuller comprehension of this large and growing store of material. The aid thus indirectly given by a great national organization towards the improvement of the position of geography and geology in the schools must everywhere be heartily welcomed.

The authority that this series of folios will exercise in matters of explanation and terminology makes it desirable that the greatest care should be exercised in their preparation. There are some points in the first number that do not reach the desirable standard. For example, 'relief' is first defined in the sentence: "The land features, commonly called the relief, include all the variations of the surface * * *" It is correctly defined afterwards: "The relief, *i. e.*, the difference in height between the stream beds and the divides." More direct evidence for the denudation of the piedmont region of Virginia is found in the deep-seated origin of the rock structures now at the surface, and in the discordance between structural arrangement and surface form, than in the great age of the rocks. The 'snag' explanation of drumlins is given a greater prominence than it deserves. The account of the Maine coast is erroneous in several respects. Glacial erosion is overestimated, and there are many exceptions to the statement that the thin soil of southern Maine is chiefly derived from postglacial disintegration; the soil is often deep, consisting of glacial drift, glacial gravels and sands, and marine clays now revealed in an irregular coastal plain which the farmers there know very well. "Ocean currents also bear sand along precisely as rivers do, depositing it where their force is checked," is a generalization that may mislead many an uninformed reader. It is unfortunate that a term so well understood as 'ridge' should be used to name the almost invisible swell of a river flood-plain, particularly in the publications of a Survey that is elsewhere so careful not to exaggerate the vertical scale of its sections.

W. M. DAVIS.

CURRENT NOTES ON METEOROLOGY.

CYCLONES OF THE PHILIPPINE ISLANDS.

FROM the Observatory of Manila, which has already given meteorology many valuable publications, comes a report upon the cyclones of the Philippines, written, as Father Algué, its author, tells us in the in-