him to return to Kilimanjaro, he paid off the last of his faithful followers, many of whom had accompanied Thomson on his great journey, and took his passage on the British India steamer to Suez in quite a sulky frame of mind, as sorry to leave his beautiful mountain as many people are to quit England. Travelling overland from Suez, he arrived in London not much more than six weeks after he had caught his last glimpse of the snows of Kilimanjaro.

PROPOSED EXPLORATIONS IN ALASKA.

SEVERAL expeditions to Alaska are projected during the coming season. Gen. Miles, commanding the military district of which the territory forms a part, desires to acquire a knowledge of the unexplored region between the head of Cook's Inlet and the Tananah watershed. The course of the Tananah is likewise unmapped, except from hearsay, though often traversed by traders in the last fifteen years; so that the opportunity exists here for a fruitful expedition. It is hoped that arrangements may be practicable by which Lieut. Ray, well known for his successful direction of the Point-Barrow party, may be able to command such an exploration. The plan contemplates work either from the Yukon as a base, with a steam-launch and a small party, ascending in June and July, and returning before navigation closes, or an expedition by way of Cook's Inlet, making the portage to the Tananah, and then descending; but a final decision is not yet reached. The party under Lieut. Abercrombie did not succeed in obtaining native assistance, as expected, and were unable to pass beyond the glacier alleged to obstruct the Copper or Atna River about sixty miles from the sea.

Meanwhile, a party has actually started, under Gen. Miles's orders, Jan. 30, for the Copper River, consisting of Sergeant Robinson and F. W. Ficket, signal-observer U.S.A., and commanded by Lieut. Allen. They intend to go to the mouth of the Atna or Copper River by steamer, and ascend as far as possible on the ice, pushing on by water as soon as the ice breaks up and the freshets are over. They hope to cross the divide from the upper Atna, and descend by one of the Yukon tributaries to the mouth of the latter river, and rejoin civilization at St. Michael's. They may be fortunate enough to make the journey in one season, but are prepared to stay two years. They will add a number of Indians to the party at Sitka, and carry various peace-offerings for the Atna Indians.

Lieut. Stoney of the navy is reported to have a new expedition nearly organized to continue his investigations of the Kowak River. The plan adopted, so far as yet decided upon, is to take a steam-launch, ascend the river as far as possible, and pursue the explorations to its source, and winter in the region if necessary. It is stated that the party is to be composed of sixteen men, which is dangerously large, considering the limited food-resources of the region, and might be advantageously diminished by one-half for explorations in the interior. If the party were to pass over the divide, and investigate the course of the Colville, returning *via* Point Barrow next summer, it would accomplish a praiseworthy and much-needed investigation.

THE DOINGS OF ASTRONOMERS.

DIRECTOR HOUGH has continued the work of the Dearborn observatory during 1884 in the same lines as in previous years. Mr. S. W. Burnham has had the use of the great telescope, a refractor of eighteen inches aperture, for observations on double stars; and, in addition to assistance rendered to Professor Hough, he has measured several difficult and interesting binary systems. The observatory has been open on Thursday evenings to members of the Chicago astronomical society, and to astronomical classes from the city high schools; and instruction in theoretical and practical astronomy has been given to the senior class of the Chicago university. The observatory delivers the signals for standard time to the city of Chicago daily.

Professor Hough has employed the great telescope throughout the year, in scientific research, with good results. Thirty-two new double stars were discovered, most of which are difficult objects, and can be observed only when the atmospheric conditions of vision are good. The planet Jupiter has mainly taken his attention, and specially the spots and markings on the disk. The remarkable red spot, first observed in 1878, has maintained its size, shape, and outline, with very slight change, ever since that time. Of late, however, it has experienced a marked change in visibility; which doubtless accounts, in good part, for the statements by other observers with smaller telescopes, that the spot had lost its outline. While from 1879 to 1883 this spot had a retrograde drift in longitude on the surface of the planet, during the past opposition this appears to have nearly ceased. For the rotation period of the planet on its axis, Professor Hough derives 9 h. 55 m. 38.5 s., determined from the mean of six hundred and sixty rotations, and varying only slightly from that for the previous year. The great equatorial belt on the disk of Jupiter is found to be subject to gradual drift in latitude from year to year. Its width has also greatly increased, principally toward the south. A large number of white spots were also observed, of variable visibility, and not absolutely relatively fixed in position. The rate of motion of the envelope in which they are situate, Professor Hough finds to be two hundred and sixty miles per hour, making thus a complete revolution around the planet in about forty-four days and a half. Colored prints of several of the drawings of the planet accompany the report, and are very faithful representations of the salient features of the disk. Delineation with the pencil, however, has been only secondary to the micrometric measurements, of which there are between one and two thousand, fixing with ntire precision the positions of the belts, spots, and more important markings.

Professor Hough and Mr. Burnham made frequent examination of the planet Saturn whenever the best conditions of observation were present. They made a special search for markings on the rings, with negative results. The belts on the ball were very conspicuous, but no marking was seen which could be used in determining the period of the planet's rotation.

The conditions of weather in the spring of the year, so unfavorable elsewhere, prevailed at Chicago; and, in their attempts to observe the satellites of Uranus, the astronomers were rewarded with success in observing these difficult objects on only a few occasions.

From the *Observatory* for February we learn that forty-five chronometers are now on trial at the Royal observatory, Greenwich, for purchase by the admiralty; that the small planets (206) Hersilia and (210) Isabella, which had not been observed since 1879, the year of their discovery, have recently been re-observed; that Herr Palisa of Vienna, the discoverer of small planets, being desirous of raising funds for the intended expedition to observe the total eclipse of August, 1886, desires to sell for two hundred and fifty dollars the right of naming the latest discovered small planet (244); and that Dr. Gill, her Majesty's astronomer at the Cape, has obtained a sum of money from the government grant for scientific purposes, in order to enable him to set on foot a photographic survey of the southern heavens. Mr. C. Ray Woods is proceeding to the Cape for the purpose of taking the requisite photographs, and he also intends to continue the work of photographing the solar corona which he lately undertook in Switzerland, under the direction of Dr. Huggins.

The Rev. S. J. Perry, director of the observatory of Stonyhurst college, communicates to the *Observatory* a summary of his observations of the chromosphere in 1884, with an automatic spectroscope by Browning, having a dispersion of six prisms of 60°. He has found the greater part of the past year favorable for this work. The mean height of the chromosphere, which varied little in 1882 and 1883, attaining its maximum in May of the latter year, fell away rapidly in 1884. A great diminution is also reported in the number of the prominences, and some falling off in their average height. The number of observed displacements of the C line differed but little in the last two years; but the amount of displacement was slight in 1884, compared with 1883. No distortions have been recorded during the past two years so great as those of April and May, 1882.

ROGERS'S HISTORY OF ENGLISH LABOR.

THOSE of our readers who are devoted to political and social science need no introduction to the recent volumes of Mr. Thorold Rogers. It is eighteen years since he published the first two volumes of his history of agriculture and prices, — a work of incalculable value to the critical inquirer. He has since then made an elaborate study of the wages of English labor during the last six centuries, and of their corresponding purchasing-power. The data, which he has collected with marvellous industry, have been printed in part, and in part they still remain in the author's notes. His work is therefore unique. No one, he tells us, has entered on this field of research except himself, and no one has attempted to make use of the data he has published for the purposes which the author has in view; yet, for all his statements, he assures the reader that he can give ample verification. The narrative which he bases upon these inquiries is by no means so statistical as to be dry. The writer is never dull, and is generally entertaining as well as instructive. He brings before the public, information, hitherto hidden, respecting the daily life, needs, burdens, comforts, and helps of the inhabitant of England since the middle of the thirteenth century.

His volume begins with a sketch of English society at that period when the vast majority of persons were engaged in agriculture; and, after devoting six chapters to this introduction, the author proceeds to the subsequent history of wages and labor, and to a consideration of the influence of legislation upon the distribution of wealth. He shows that the evils of pauperism and the degradation of labor were largely due to governmental acts designed to compel the laborer to work at the lowest wages possible. Although this bad legislation has long since been abandoned or modified, the effects remain in England to-day. It will thus be seen that the volumes are a contribution to the historical method of political economy. If the author's figures are correct, and his mode of presenting them trustworthy, it is obvious that he has enabled the statesman and the economist to study the actual results of economic legislation during a period quite long enough to be very instructive. His conclusions have an important bearing upon the spread of communism as well as upon the existence of poverty.

We can perhaps exhibit the tendency of the entire work most readily by giving an analysis of the closing chapter, in which the remedies for present evils are succinctly pointed out.

During the last sixty years parliament has done much toward abrogating severe laws which interfered with the freedom of labor.

Six centuries of work and wages. The history of English labour. By JAMES E. THOROLD ROGERS, M.P. New York, *G. P. Putnam's sons.* 591 p. 8°.