importance of encouraging the development of the exceptional individual in every race.

The fifteen chapters which make up the volume are of rather unequal merit and seem to have no natural sequence. This defect of arrangement is emphasized by faults of style. The writer is discursive and tends to glowing rhetoric, "glittering generalities" and overmuch interpolation of poetry and emotional anecdote. There is too much repetition and iteration, oftentimes on trivial points. In spite of all this, the book is readable and enjoyable because of the author's skill in putting telling points in brief, pithy sentences. In discussing physiognomy as a criterion for judging men, he says: "As a man *thinks,* not as he *looks,* finally fixes his status," and again, referring to facial angles and jaw form, "Thoughts and not bites win the battles of life." In reference to the origin of the southern negroes, we find these apt words: "The question then is, not where did he start from, nor how long has he been on the road, but *has he arrived?*" In chapter ten, "The Solution," probably the best chapter in the book, there is an admirable plea for the suppression of those people who, and things which, tend to encourage racial friction. The following deserves quotation. "Dixon and Johnson have been drawbacks to their race and country. It was an unfortunate thing for the country that popular notice was given to the Leopard Spots or the Reno Battle. If neither had been noticed the subsequent 'bad eminence' of the chief actors would not have marred the country's history."

The frankness and fairmindedness of Dr. Roman are constantly in evidence. His appreciation of the point of view of the best southern whites is delightful and most encouraging. Referring to their claim of "the absolute and unchangeable superiority of the white race" he says: "Fundamentally erroneous and mischievous as I believe this assumption to be, I am not disposed to quarrel over it with such men as Messrs. Page and Murphy." "From different starting points, Mr. Page and I reach the same conclusion: 'Our plain duty is to do the best we can to act with justice and a broad charity and leave the consequences to God.'" One other quotation is necessary to reveal the point of view of the best southern colored men on that bugbear "social equality." Dr. Roman says: "I know my people, their hopes, their fears, their aspirations and their desires; and from my youth up I have preferred a discreet silence to false or dishonorable speech. With all candor and earnestness I say to the American public: *the negro has no desire to break over social barriers. In this regard he is if possible more strongly prepossessed in favor of his own than the white man.* In these matters the negro is not only pleased but happy to work out *his own equivalent rights.* But in civil, political and economical matters the negro insists and for the good of the country ought to insist upon *equal,* not *equivalent,* rights." If this is not a scientifically impregnable position, your reviewer fails to detect its weakness. It seems to him obvious that the one possible solution of the race question lies in strengthening racial self-respect and mutual interracial confidence. For this reason, all legislation looking towards segregation of either race is sadly mistaken and postpones indefinitely the solution intelligent men on both sides are seeking. As Dr. Roman truly says: "White ignorance is the most serious menace in the race situation; for this ignorance is in power and hopes to benefit itself not by finding more light but by increasing darkness." Colored ignorance is much less mischievous because so much less powerful, but it is of course a serious menace. Racial self-respect should be greatly promoted among the negroes by the publication of Dr. Roman's book, and racial comity should be likewise advanced. For there is as much for the white race in the volume as there is for the author's own people.

Hubert Lyman Clark

The Elements of Surveying and Geodesy. By W. C. Popplewell. Longmans, Green and Co., London, 1915. Pp. ix + 244, illustrated.

The author states in the preface of this volume that he has made an attempt to present a comprehensive view of the subject of geodesy in its widest sense in order to provide students and others with such information as may lead

to a sound knowledge of the fundamental ideas involved. As leading towards this the author said he has always advocated personal instruction in the use and adjustment of instruments, as well as the useful practise which may be obtained in a students' surveying camp, but that before either of these is possible the student must have mastered the bedrock principles, and the author hopes that a careful perusal of the pages of the volume may help him to do this.

The book is disappointing and is not recommended to the student of engineering nor to the practising engineer as a guide or manual. It seems to be more suited to the old-fashioned county surveyor, with his Jacob's staff and Gunter's chain, for the county surveyor of today, in the United States at least, is more inclined to use the steel tape and the transit than those old instruments, which should be relegated to the museum.

The chapter on "Calculations of Distances and Heights" opens with the statement that "It is assumed that the reader has some knowledge of plane trigonometry." In this country there is probably no school teaching surveying which does not require a rather thorough course in plane trigonometry as a preliminary to the course in surveying.

Under the heading, "Levelling and Contouring" this significant statement is made: "The staff-holder should be very careful to see that the particular spot of ground upon which the staff rests is fairly flat, and if the ground is of a soft or spongy nature the spot should be pressed down with the foot." This is not teaching correct principles, for there is scarcely any leveling which should not require solid supports for the rod, and the earth, even if "*pressed down by the foot,*" can not be considered a satisfactory rod support.

The short chapter on "Geodetic or Trigonometrical Surveying" is almost entirely historical and gives the student nothing which would guide him in actual work. Even the historical part does not include the recent developments and methods.

The chapter on "Geodetic Astronomy" is particularly disappointing, for it deals with only those methods which might be used in explorations and in determining the variation of the compass.

It is very difficult to see where or how such a book has any useful purpose, for there are so many other books available which are far better for both the student and the engineer.

WILLIAM BOWIE

Diabetes Mellitus. By NELLIS B. FOSTER, M.D. J. B. Lippincott and Company, 1915.

This is a model monograph for the modern practising physician. Clearly written and not too technical in language, it is still thoroughly scientific in the mode of presentation. The rapid advance in the knowledge of the fundamental biochemical processes which take place within the living body has nowhere been more pronounced than in studies concerning the nature of diabetes, a disease in which the oxidation of glucose, a substance which ordinarily furnishes two thirds of all the chemical transformations of the organism, has been impaired or totally abolished. Dr. Foster has presented all the essential details concerning the pathological chemistry of diabetes, and has at the same time written from that three-fold standpoint which controls the value of a modern medical book, personal research, personal clinical experience, knowledge of the research and clinical experience of the best authorities of the modern world. In no other book on diabetes has the value of American work been so fully recognized, and the reviewer feels that it is the best book upon the subject which has been written.

GRAHAM LUSK

SPECIAL ARTICLES

PERMEABILITY AND VISCOSITY

IN a recent article[1] Spaeth has suggested that the permeability of the surface layer of protoplasm is determined by its viscosity, which in turn depends on its colloidal condition. Increased permeability may be produced by increased colloidal dispersion, which decreases viscosity and permits substances to diffuse more rapidly into the protoplasm. An

[1] SCIENCE, N. S., 43: 502, 1916.