

about the average number of applications. There are other books on the calculus which contain many more applications than the present volume. Two problems are discussed in some detail which are omitted in most calculus books, viz., the cable with a uniform horizontal load (parabolic cable) and the cable with equal loads on equal lengths (catenary).

The authors have exercised considerable care and have met with more than ordinary success in making clear the meaning of an infinitesimal, curvature, and mean value. Duhamel's theorem is explained with unusual clearness and is used consistently in obtaining integral forms. Illustrative examples are numerous.

The preface states that a large number of drill problems have been inserted. In general we find this to be true. None of the lists are excessively long. Some are in our opinion too short. Chapters XVI and XIX end with no problems. We find other chapters ending with 1, 2, 3, and 5 problems. Answers are given to approximately fifty exercises.

The subject of integration is first brought to the student's attention on page 46 just after he has learned to differentiate the power function. Thereafter whenever he is shown how to differentiate a new function he is at once also shown how to apply the result to the integration of certain forms.

In the short sixteen-page chapter on differential equations no use is made of the initial conditions to determine the constants of integration with the exception of the discussion of a damped harmonic motion in the last article of the book. No exercises are given after this discussion. The subjects of center of gravity and moments of inertia have been treated somewhat more fully than is usual.

The book is designed for a course of four hours a week throughout the college year. But it is easy to adapt it to a three-hour course by suitable omissions. On the whole the book is a good one and has added its share to the general endeavor to obtain better texts.

W. V. LOVITT.

*Die Differentialgleichungen des Ingenieurs.* By Dr. W. HORT, Engineer in the Siemens-Schuckert Works. Berlin, Springer, 1914. 540 pp.

THIS volume cannot fail to be of interest to teachers of mathematics in American schools of engineering. The follow-