Plane Algebraic Curves. By Harold Hilton, M.A., D.Sc. Oxford, The
    Clarendon Press, 1920. 16 + 388 pp.

This is the first treatise on plane algebraic curves to appear in English
since Salmon's famous treatise which was published over forty years ago.
During the last four decades many new theorems have appeared in the
various mathematical journals and thus it is fitting that a new English
treatise should be written.

In dealing with such an extensive subject it is of course impossible to
include all the known material, and one must expect to find omissions of
certain topics. The most striking omission in this text is the modern
algebraic-geometric development as set forth by Castelnuovo, Severi, Segre
and others. In fact, the whole topic of geometric transformations and the
derivation of properties of algebraic curves by means of these transforma-
tions has been omitted except for two cases of the quadratic transforma-
tions. Thus one is impressed by the fact that this treatise follows to a
great extent the same general course as Salmon's, except that topics are
more fully discussed and are brought up to date. However, many excellent
collections of exercises are scattered throughout the book, and these alone
are well worth the price of the text. The great majority of the results
have been derived by algebraic methods. In many places the work could
be shortened if synthetic methods were used.

The main topics discussed are: coordinate systems, projection, singular
points, curve tracing, tangential equations and polar reciprocals, foci,
superlinear branches, polar curves, Hessian, Steinerian, Cayleyan, Jacobian
of three curves, Plücker's numbers, deficiency, higher singularities, two
types of quadratic transformations, unicursal curves, derived curves, inter-
section of curves, unicursal cubics, non-singular cubics, cubics as Jacobians,
use of parameter for non-singular cubics, unicursal quartics, quartics of
deficiency one and two, non-singular quartics, ovals and circuits, corre-
sponding ranges and pencils.

This book should be found in every mathematical library, for the
topics discussed are most admirably treated. As a text for a first course
it is superior to anything that has appeared as yet in any language because
of the excellent collection of exercises.

<div style="text-align: right">F. M. MORGAN.</div>

Vector Calculus. By Durgaprasanna Bhattacharyya. Calcutta, Univer-
    sity of Calcutta, 1920. 90 pp.

In order to present the essential features of vector analysis for use in
mathematical physics, the author develops the differential and integral
calculus of vectors and functions of vectors directly. He scorns the use
of coordinates very properly with much the feeling of Tait that one "should
not violate the spirit of the Order." However, he does not overlook the
great practical advantage that accrues from the study of ordinary vectors.

The author defines line, surface, and volume integrals of vectors and of
vector functions. He then defines gradient of a scalar function F sub-
stantially as the vector F in the expression $d\rho \cdot F$. After considering
the linear vector function of a vector, he proceeds to the differential calculus