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Descrizione fisica	1 online resource (xx, 389 pages) : digital, PDF file(s)
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Nota di bibliografia	Includes bibliographical references (p. 355-368) and indexes.
Nota di contenuto	Instruments and Methods -- Precursors of the Greeks -- Measuring distances -- Orientation and right angles -- Measuring heights -- Levelling -- Background to the dioptra -- The sighting tube -- Astronomical instruments -- The Hipparchan dioptra -- The measuring rod -- Gamaliel's tube -- Philo's level and staff -- The dioptra -- The treatises -- The sources of the treatises -- The minor sources -- The plane astrolabe -- The standard dioptra -- Hero's dioptra -- Levelling -- Other surveys -- Chronological conclusions -- Testing a reconstructed dioptra -- The libra -- The evidence -- Testing a reconstructed libra -- The groma -- Grids -- The groma and its use -- The odometer -- Practical Applications -- Measurement of the earth -- Mountain heights -- Canals and aqueducts -- Early canal schemes

-- Aqueduct surveying -- The Nimes aqueduct and others -- The challenges of surveying -- Tunnels -- Categories -- Alignment -- Level -- Meeting -- Instruments -- Roman roads -- Interpolation and extrapolation -- Successive approximation -- Dead reckoning -- Geometrical construction -- The Sources -- The treatises -- Hero of Alexandria: Dioptra -- Julius Africanus: Cesti 1 15 -- Anonymus Byzantinus: Geodesy -- Al-Karaji: The Search for Hidden Waters XXIII -- The basic elements (Chapter 1) -- Background to the dioptra (Chapter 2) -- The dioptra (Chapter 3) -- The libra (Chapter 4) -- The groma (Chapter 5) -- The odometer (Chapter 6) -- Measurement of the earth (Chapter 7) -- Mountain heights (Chapter 8).

Sommario/riassunto

The Greeks and, especially, the Romans are famous for the heroic engineering of their aqueducts, tunnels and roads. They also measured the circumference of the earth and the heights of mountains with fair precision. This book presents new translations (from Greek, Latin, Arabic, Hebrew and Syriac) of all the ancient texts concerning surveying, including major sources hitherto untapped. It explores the history of surveying instruments, notably the Greek dioptra and the Roman libra, and with the help of tests with reconstructions explains how they were used in practice. This is a subject which has never been tackled before in anything like this depth. The Greeks emerge as the pioneers of instrumental surveying and, though their equipment and methods were simple by modern standards, they and the Romans can be credited with a level of technical sophistication which must count as one of the greatest achievements of the ancient world.
