



*Robert P. Sharp makes notes during a field trip to the Kelso Dunes.*

## When the Desert Winds Blow

For the past 15 years Robert P. Sharp, professor of geology and chairman of Caltech's geology division, has been conducting a "weekend research project" among the sand dunes of southern California. As a geomorphologist—one who studies the evolution of land forms—he is interested in the mechanisms by which the dunes form and move as sand is nudged and carried by the winds. Among the kinds of information that he thinks dunes may be able to provide are records of the possible migration of the geographic and magnetic poles during the earth's history (which would change the prevailing wind patterns and, hence, be reflected in the orientation of fossil dunes) and the rates of erosion on Mars, where wind may be the major eroding agent.

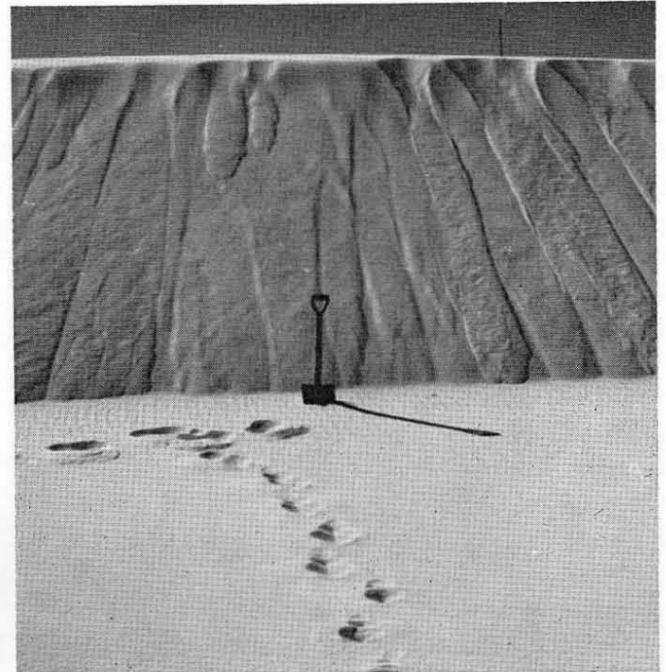
But sand dunes are attractive to Dr. Sharp for another reason—their great beauty. The pictures on these pages illustrate some of the features he has been studying and the stark beauty of the dune country as well.



*Aerial view of a dune complex west of the Salton Sea shows the typical barchan (crescent) form of dunes, but also shows how those forms are distorted when faster-moving dunes overtake slower ones. The wind is from the left.*



*Both types of ripples here were developed under the same wind conditions. The barchan-like ripples occur in material having the consistency of fine gravel; the others are in sand.*



*Sand is blown along the relatively gentle windward slope of a dune and accumulates on the lee slope. Eventually it "slumps" on the lee side in little slides like these.*

*It takes very little to start a dune growing—just something to begin sand accumulation. Once begun, however, the dune will move from its original site and may grow to impressive size, like this one in the Kelso Dunes.*

