

value of his records : though, in desert tracts, his knowledge of surveying may sometimes be required. Thence also the most recent map should be selected ; since the works of man, at least, are subject to changes, especially in improving countries ; often causing egregious confusion, as at present in Scotland.

Excepting military maps, few contain the forms of ground, so important to a geologist. The want of objects in mountainous countries is but imperfectly supplied by rivers ; and, without that, an accurate geological record will always be difficult. The nature, positions, and boundaries of rocks, are often indeed so intimately connected with these forms, that a military survey becomes invaluable ; while they who have experienced its utility, will often gladly undertake this previous labour. It is to be wished that map-makers may at length become sensible of their neglect on this point ; and that their conjectural symbols may be replaced by delineations to render their works of use to more than the mere traveller. To the geologist, the blackness of maps is also a serious grievance ; as it deprives him of the use of broken and delicate tints, in distinguishing among numerous rocks. Nor is it required ; since any ground can be fully expressed without it, as is proved by the recent maps of France and Italy : while, if often arising from misplaced ambition in the engraver, it is more frequently the fault of superintendents, ignorant of art. And a similar evil arises from loading them with symbols of forests and wastes, obscuring the much more important forms of the ground.

All boundaries of rocks should be laid down, in the field, in the selected colours : and unless this be done, the produce will deserve no confidence : while the observer himself will soon find that he can ensure accu-