SURVEYING INSTRUMENTS.

lous editions I reprinted here, with a few trifling
, part of a paper that I originally communicated to
Geographical Society, and which will be found
of their volume for 1854. In addition to it, com-
ns are published there from Lieutenant Raper,
'itzRoy, Admiral Smyth, Admiral Beechey, and
kes; the whole of which was collected under the
nts to Travellers;' they were printed in a separate
videly circulated. When the edition was exhausted,
nmittee was appointed by the Council of the Royal
al Society, consisting of Admiral Sir George Back,
. Collinson, and myself, to revise the pamphlet
. This process was again gone through in 1871,
he pamphlet is so much amended and enlarged
uld do no good by making extracts. It is much
intending travellers should apply for this third
the 'Hints to Travellers' at the Society's rooms,
ow: for it gives a great deal of information upon
s that they would find of real value. Its price

or delicate Instruments.—Entrust surveying instru-
fragile articles to some respectable old savage,
mities compel him to walk steadily. He will be
t the prospect of picking up a living by such easy

g low angles by reflexion.—An ordinary artificial
useless for very low angles. They can be measured
wo or three minutes, by means of a vertical point
obtained in the following manner:—Tie two pieces
crossing each other at two feet above the ground,
ssel of mercury underneath it, and look down upon
ry. When the eye is so placed, that the crossed
ctly cover their reflexion, the line of sight is truly
nd, if the distant object be brought down to them
tant, the angle read off will be 90° + altitude.
eorge's arrangement of glass floating on mercury

(made by Cary, Fleet Street, London), allows of very low angles being observed, but the use of this instrument requires considerable caution as to the purity of the mercury and the cleanliness of the glass.

Substitute for glass roof to Horizon.—For want of a glass roof to place over the mercury, a piece of gauze stretched over the vessel will answer very tolerably for the purpose of keeping off the wind. The diameter of the pupil of the eye is so large, compared to the thickness of the threads of the gauze, that the latter offer little impediment to a clear view of the image.

Silvering Glasses for Sextants.—"Before taking leave of this subject it may not be unimportant to describe the operation of silvering the glasses of sextants, as those employed on surveying duties very frequently have to perform the operation.

"The *requisites* are clean tinfoil and mercury (a hare's foot is handy)—lay the tinfoil, which should exceed the surface of the glass by a quarter of an inch on each side, on a smooth surface (the back of a book), rub it out smooth with the finger, add a bubble of mercury, about the size of a small shot, which rub gently over the tinfoil until it spreads itself and shows a silvered surface, gently add sufficient mercury to cover the leaf so that its surface is fluid. Prepare a slip of paper the size of the tinfoil. Take the glass in the left hand, previously well cleaned, and the paper in the right. Brush the surface of the mercury gently to free it from dross. Lay the paper on the mercury, and the glass on it. Pressing gently on the glass, withdraw the paper. Turn the glass on its face, and leave it on an inclined plane to allow the mercury to flow off, which is accelerated by laying a strip of tinfoil as a conductor to its lower edge. The edges may, after twelve hours' rest, be removed. In twenty-four hours give it a coat of varnish, made from spirits of wine and red sealing-wax. It may be as well to practise on small bits of common glass, which will soon prove the degree of perfection which the operator has attained." (Admiral Sir E. Belcher.)