

### Clouds and Shadows.

IN a letter to NATURE (April 18) Mr. Chas. Tilden Smith directs attention to a peculiar shadow he noticed in the western sky last Easter Monday after sunset, and which he no doubt correctly attributed to "some unseen object intercepting the sun's rays," and so casting a shadow on the high and still directly illuminated stratus he mentions.

Such shadows are by no means uncommon in lower latitudes, and are certainly caused either by clouds, especially the towering columnar cumuli (so common in the Caribbean Sea) or by mountains. For many years past the writer has been collecting data regarding such shadows and working out the position, size, and shape of the objects causing them. He has succeeded in (a) predicting correctly the form, position, and duration of the shadows caused by mountains for a sunset viewed from a known position (supposing that clouds did not interfere), e.g. from a ship to the east of Cuba, in which case it was possible to assign some of the observed shadows to definite peaks; and (b) he has succeeded in (conversely) deducing from the observed positions and forms of these shadows the general configuration of the mountain ranges which caused them—e.g. off the eastern coast of Brazil.

Such shadows to be seen well require (1) a clear lower atmosphere, and (2) a reflecting layer at a considerable height—e.g. six miles.

The writer hopes to be able before long to publish these and many other observations and deductions, together with the formulæ necessary for the analysis of this part of a sunset.

T. C. PORTER.

Upton, Slough, May 3.

### THE ROYAL ACADEMY AND NATURE-STUDY.

THE annual exhibition of pictures at the Royal Academy always affords a good opportunity of examining the works of the several contributors as far as they may be considered representations of natural phenomena.

The following notes have therefore been made regarding such points as clouds, sun, moon, sunset skies, &c., and these are brought together under their respective heads.

#### MISTS.

163. *The Cradle of the Storm.* Frank T. Carter. The mist or low drifting cloud about the mountains is here beautifully portrayed, and the swirl-forms indicate local eddies; the lighting is very true.

190. *A Highland Loch.* Peter Graham, R.A. Beautifully graded mists on the mountain sides, and the effect of the rift, which is an important feature in the picture, is well indicated.

#### CLOUDS (NIMBI OR RAIN CLOUDS).

22. *The Midlands.* C. E. Johnson. Cloud forms and colour very good. Excellent representation of a rain squall on the right.

169. *The Hunters.* C. Napier Henry, R.A. Form and colour and general arrangement of the clouds quite natural.

170. *Dryslwyn.* T. Hodgson Liddell. The cloud forms here are accurately shown, but the falling rain is not well represented, being not sufficiently transparent for such a close squall.

184. *A Passage Perilous Maketh a Port Pleasant.* W. L. Wyllie, R.A. The cloud forms and colour here

are very natural, and the reflection on the water true.

189. *The Passing Snowstorm.* Ernest Procter. The clouds here are too dark and coarse. (When looked at from some distance the effect is improved.)

193. *Bredon on the Avon.* Alfred Parsons, R.A. Both form and colour of the clouds beautifully represented. A fine cloud study and one to be copied.

221. *Rain Clouds: Bosham.* Moffat Lindner. The large nimbus is far too solid-looking and lacking in detail. Such a cloud in nature is full of detail, both in structure and light gradations. As here depicted it looks like a lump of dough.

285. *The Approaching Shower.* Beatrice Bland. Both the clouds and falling rain are well represented. The shower, however, is not approaching but travelling nearly from left to right, as indicated by the slant of the falling rain.

117. *The Approaching Gale.* Julius Olsson. The clouds and waves are both good in form, but why the violet colour in both?

359. *Stormy Evening on the Cornish Coast.* Julius Olsson. This picture, like 117 above, is too violet all over.

360. *Evening on the Nebelhorn, Bavaria.* Edward T. Compton. The contrast between the fair weather on the right of the picture, the approaching rain clouds on the left, and the brightly illuminated snow-fields in the foreground is well thought out and rendered very true.

#### CLOUDS (CUMULI, FINE WEATHER CLOUDS).

20. *Woodland and Hill.* Sir E. A. Waterlow, R.A. Very fine representation of clouds with excellent detail and gradation. Perhaps some of the upper portions of them are not white enough.

40. *The Incoming Tide: Porth, New Quay.* B. W. Leader, R.A. Good cloudscape, but must not be looked at too closely to obtain desired effect.

81. *Submarines and Torpedo Craft: Old Portsmouth.* W. L. Wyllie, R.A. Most excellent clouds, showing the result evidently of much observation. Indications of ascending air and upper horizontal air currents very natural. Reflection on water well graded.

115. *The Hills of Appin.* J. Campbell Mitchell. Forms of clouds most unnatural. Too much drawn out vertically, and little detail shown.

162. *Marazion Marsh, Cornwall.* J. Noble Barlow. Clouds badly formed, and, like those in 115, too vertical.

323. *The Home of Labour.* E. Blair Leighton. No idea of cloud form, and lighting all wrong. Clouds are drawn out like 115 and 162.

393. "The Toiling Year's Last Breath." Frank Walton. The clouds are good, both in form, detail, colour, and gradation. Their lower flat surfaces should be horizontal and not all inclined similarly.

461. *The Walls of England.* R. Gwelo Goodman. Absolutely impossible skyscape.

582. *Spring Sunshine.* Alfred Parsons, R.A. The cumuli clouds and sky are here very naturally depicted, and the artist has blended the sky with the landscape most successfully. The tints of the blossoms on the trees are true and admirably represented.

755. *A Fine Morning on the Sussex Coast.* B. W. Leader, R.A. A well-painted and natural skyscape with the same proviso as 40.

129. *The Mass at Dordrecht.* Moffat Lindner. Well-shaped cumuli and good reflections of clouds in water.

198. *Skirt of the Dunes at Condette, Pas-de-Calais.* H. W. B. Davis, R.A. Gradation of blue sky from horizon upwards is possibly changed too suddenly.