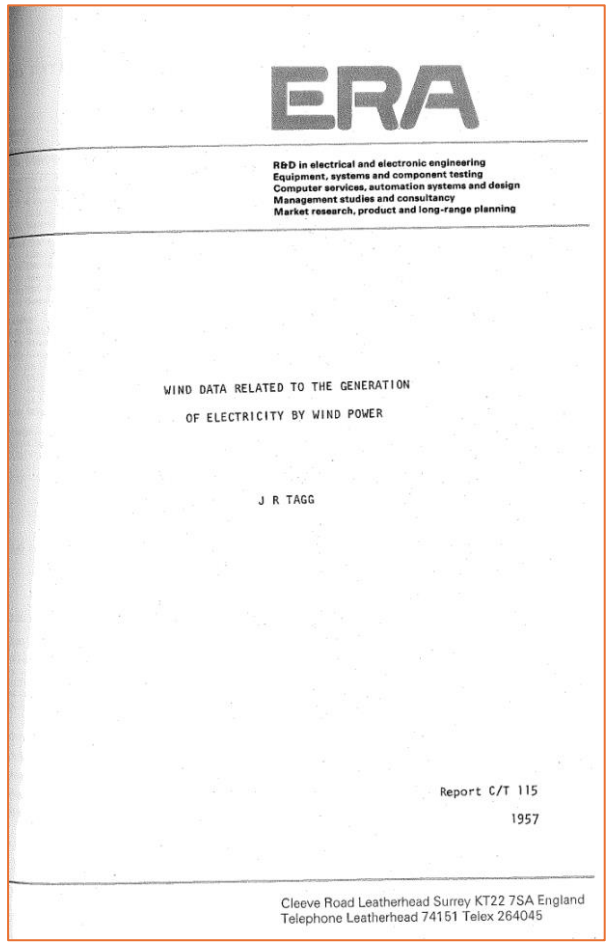
After WWII, and alongside Juul (DK) and Hütter (DE), Edward Golding undertakes wind energy research in his home country (UK) between 1949 and 1965



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WIND DATA RELATED TO THE GENERATION
OF ELECTRICITY BY WIND POWER

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Report C/T 115
1957

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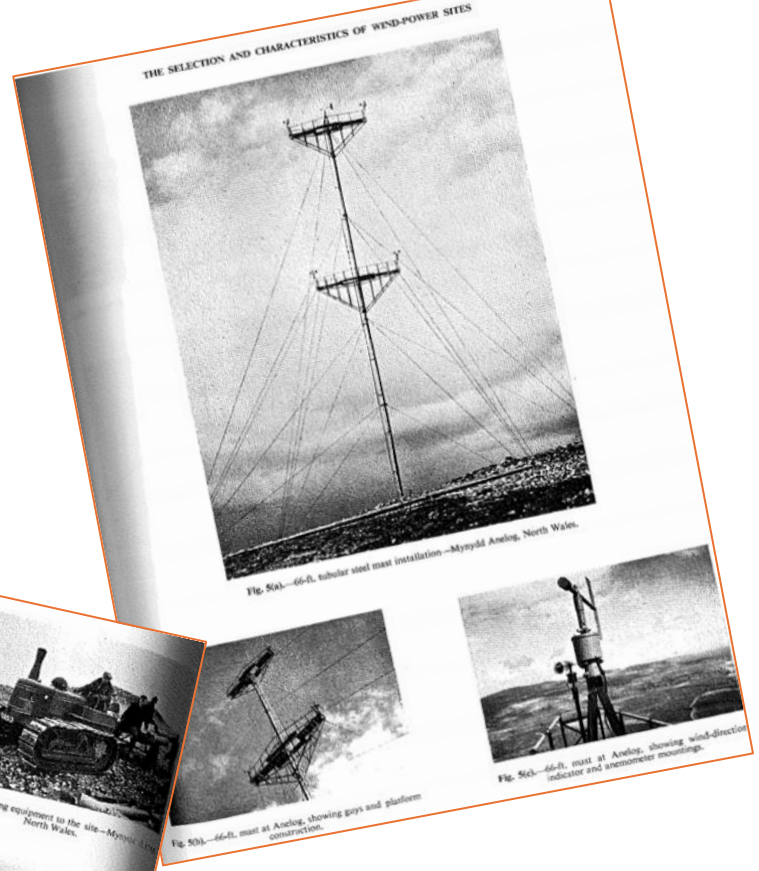
THE NEW SCIENTIST, 18 JULY 1957 21

PROFILE: E. W. Golding

He wants us to harness the winds

ONE day last summer two men travelled from London to Southampton on an unusual mission: they wanted to see a windmill being loaded on to a boat sailing for North Africa. For one of them, Edward William Golding, this cargo meant a setback to his hopes that the wind would soon be harnessed and provide this country with additional electricity. The machine had been built for the Central Electricity Authority at a time when the idea of getting power from the wind aroused considerable enthusiasm in official circles. But the C E A abandoned its experiments, and shelved the project, as the eyes of the people in high places gradually focused on nuclear energy. Today the windmill stands on an Algerian hill and is used to supplement the local water power in times of drought or sparse rainfall.

Golding has been advocating the exploitation of this natural source of energy since 1948, when the Electrical Research Association appointed him as head of its newly-formed Rural Electrification and Wind Power Department. Even the fact that the ranks of his supporters thinned because their imagination was fired by the possibilities of the "atomic age" has not shaken his own faith. Already hundreds of sites all over the British Isles have been proved, and he confidently estimates that if all these were used, they could generate about ten times as much energy as, for example, Battersea power station. After many arduous climbs to measure the speed of the wind on bare mountain tops he is convinced that there is plenty of scope for wind power schemes in the British Isles, and that the regions along the west coast in particular could benefit greatly from them. The next step towards this admittedly distant goal is to develop a new and better machine, a programme in which the Ministry of Power is showing an



THE SELECTION AND CHARACTERISTICS OF WIND-POWER SITES

Fig. 5(a).—66-ft. tubular steel mast installation—Mynydd Anelog, North Wales.

Fig. 5(b).—66-ft. mast at Anelog, showing guys and platform construction.

Fig. 5(c).—66-ft. mast at Anelog, showing wind-direction indicator and anemometer mountings.

Fig. 6(a).—Hauling equipment to the site—Costa Hill, Orkney.

Fig. 6(b).—Hauling equipment to the site—Mynydd [illegible] North Wales.

Fig. 6(c).—Carrying equipment on horse-back to the site—Shieve Tooey, Co. Donegal.

Fig. 21.—120-ft. mast—Costa Hill, Orkney

The work includes characterizing wind conditions on Scottish hilltops

Two decades later, an IEA Wind research task led by Peter Taylor (Canada), carry out the Askervein hill experiment, a cornerstone in wind flow modelling.

BASIC 1982, 19083 reports at:
http://www.yorku.ca/pat/research/Askervein/index.html

Report: MSRB-83-8

ASKERVEIN '82: Report on the September/ October 1982 Experiment to Study Boundary-Layer Flow over Askervein, South Uist

by

P.A. Taylor and H.W. Teunissen

Research Report: MSRB-84-6

The Askervein Hill Project: Report on the Sept./Oct. 1983, Main Field Experiment

by

P.A. Taylor and H.W. Teunissen

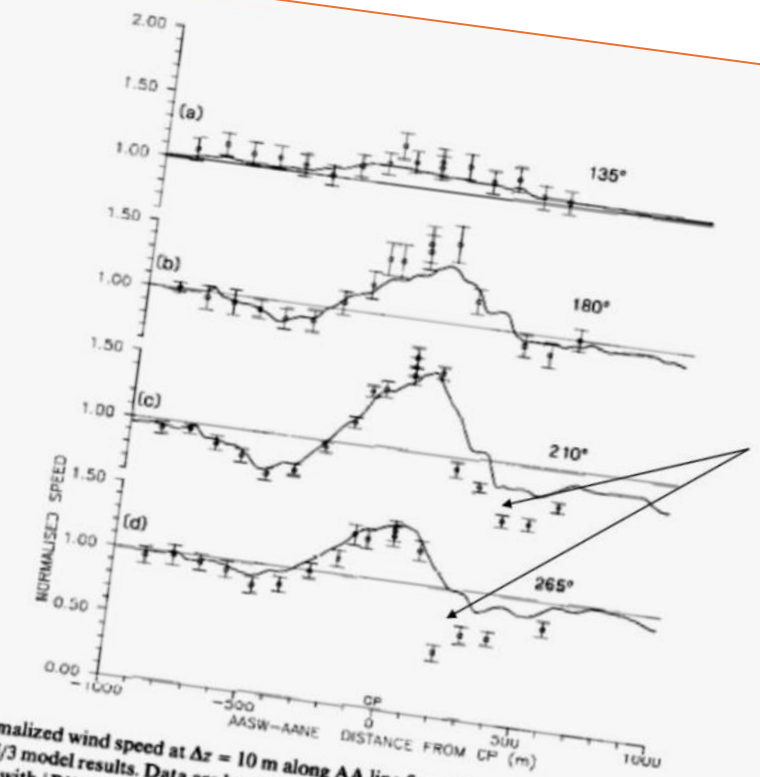


Fig. 10. Normalized wind speed at $\Delta z = 10$ m along AA line for selected wind directions and comparisons with MS3DJH/3 model results. Data are based on averages for the direction groups listed in TT87, Table 7b excluding runs with $|Ri| > 0.015$. Upstream wind directions: (a) 135°; (b) 180°; (c) 210°; (d) 265°. $\bar{I}$ mean of 10 min values, error bars denote one standard deviation; —— MS3DJH/3 model results.

MS3DJH does well on upstream side of the hill but not in lee of the hill when intermittent separation occurs

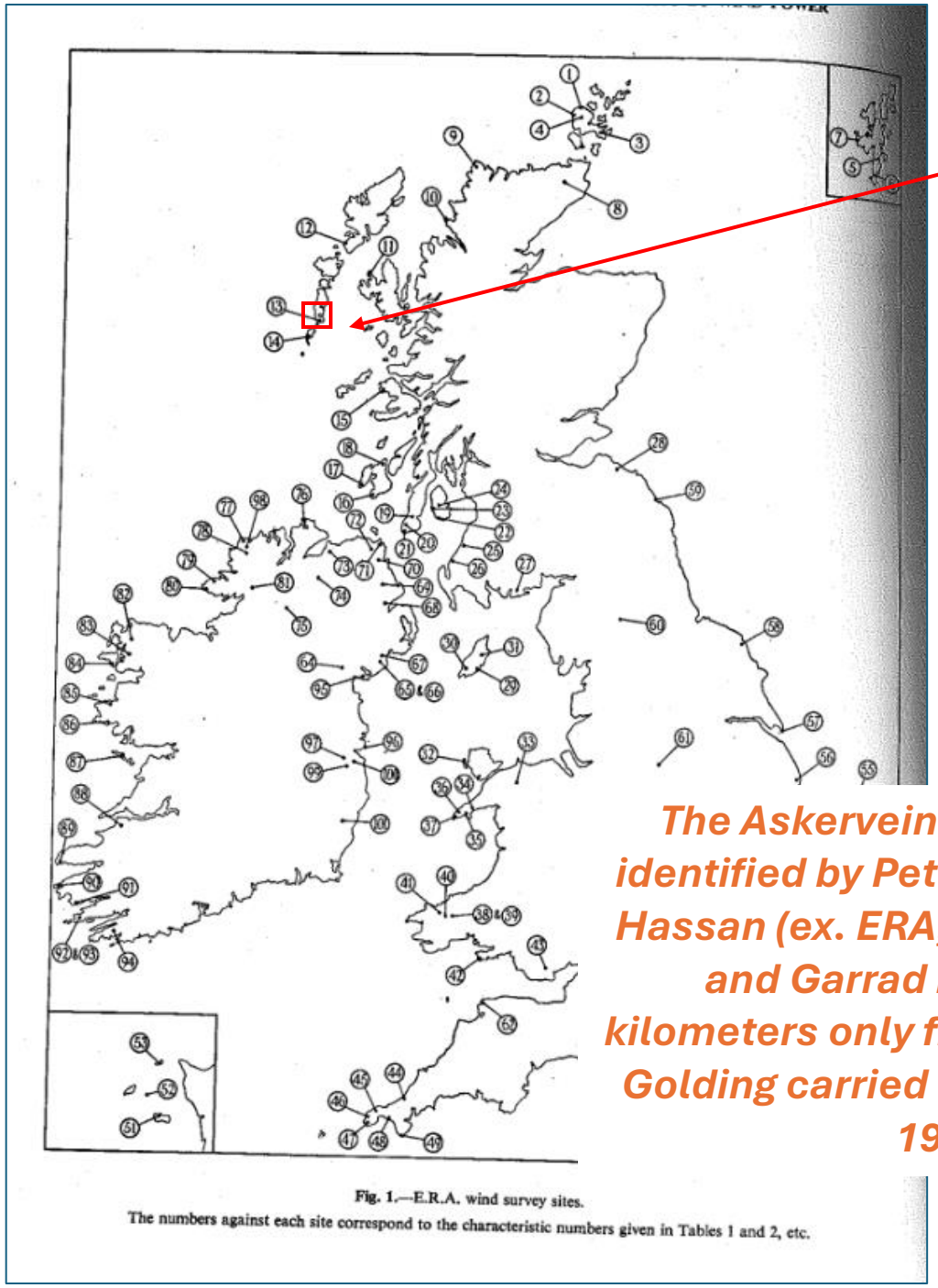
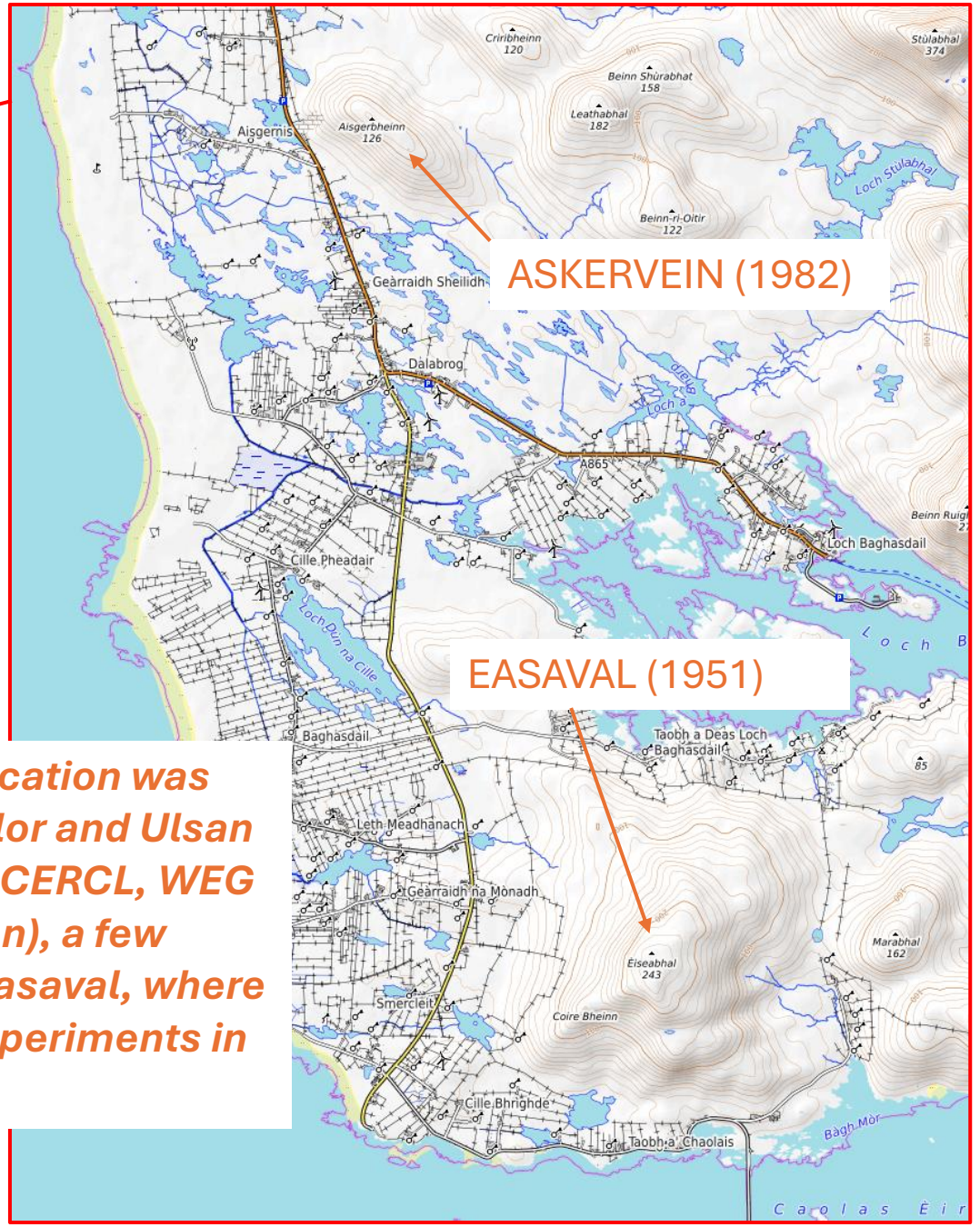


Fig. 1.—E.R.A. wind survey sites.
The numbers against each site correspond to the characteristic numbers given in Tables 1 and 2, etc.



The Askervein hill location was identified by Peter Taylor and Ulsan Hassan (ex. ERA, then CERCL, WEG and Garrad Hassan), a few kilometers only from Easaval, where Golding carried out experiments in 1951 ☺

OMG so many perfect hills

(from Tagg, 1957)

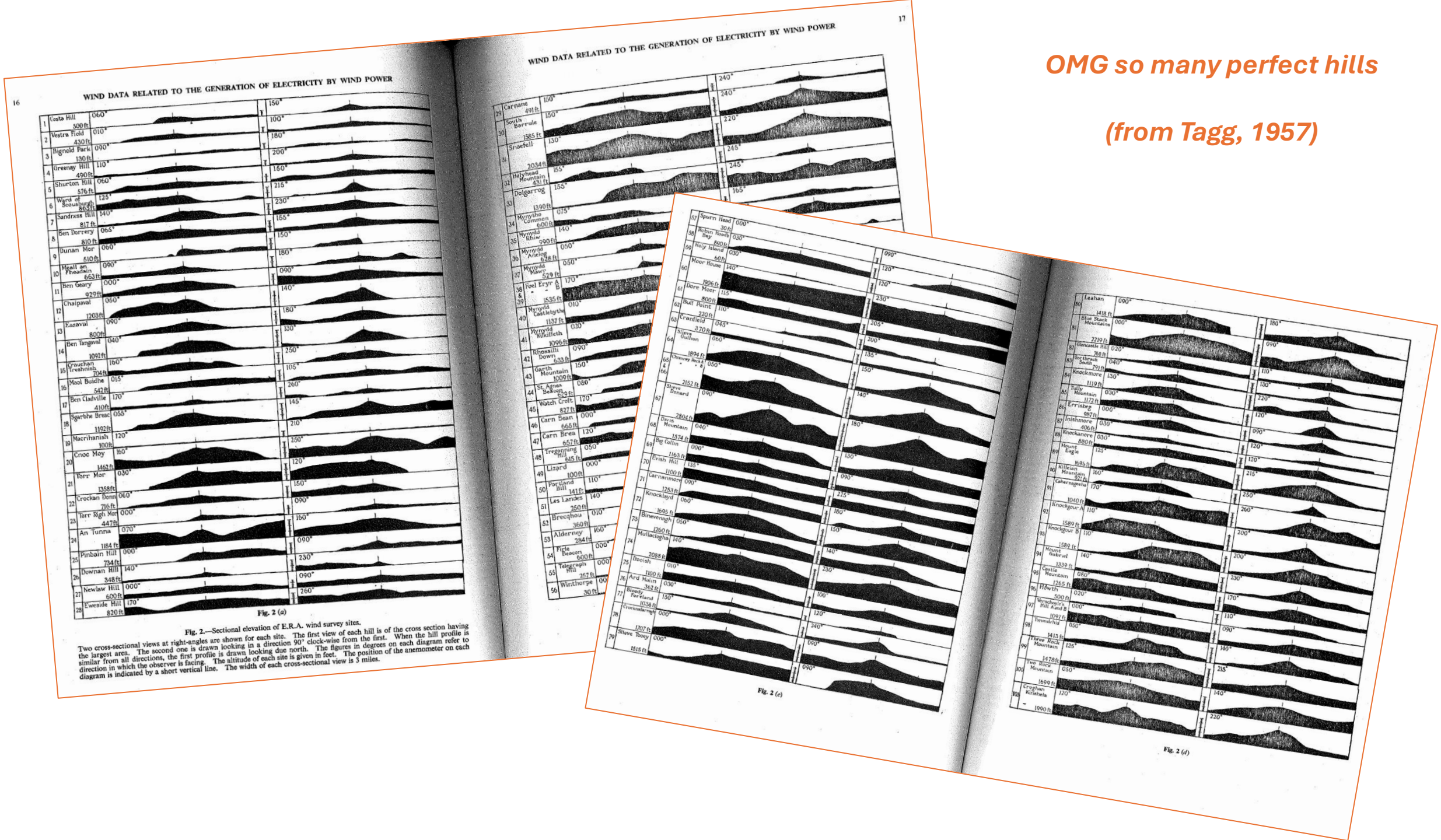


Fig. 2.—Sectional elevation of E.R.A. wind survey sites.

Two cross-sectional views at right-angles are shown for each site. The first view of each hill is of the cross section having the largest area. The second one is drawn looking in a direction 90° clock-wise from the first. When the hill profile is similar from all directions, the first profile is drawn looking due north. The figures in degrees on each diagram refer to direction in which the observer is facing. The altitude of each site is given in feet. The position of the anemometer on each diagram is indicated by a short vertical line. The width of each cross-sectional view is 3 miles.