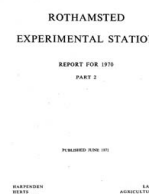


Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



Rothamsted Experimental Station Report for 1970 Part 2



[Full Table of Content](#)

Appendix - Profile Descriptions of Wilderness Soils

B. W. Avery and D. W. King

B. W. Avery and D. W. King (1971) *Appendix - Profile Descriptions of Wilderness Soils* ; Rothamsted Experimental Station Report For 1970 Part 2, pp 134 - 135 - **DOI:**

<https://doi.org/10.23637/ERADOC-1-34804>

ROTHAMSTED REPORT FOR 1970, PART 2

them; J. M. Thurston for locating the old plot boundaries on Geescroft and for providing details of the botanical changes in the wildernesses; C. Bloomfield for help in the work on soil sulphur; K. C. Ryan for the statistical analyses; C. L. Bascomb for the mechanical analyses; J. Manderson and G. Pruden for many chemical analyses. I also thank Dr. R. G. H. Bunce, of the Nature Conservancy, for advice about tree measurements.

APPENDIX

Profile Descriptions of Wilderness Soils

B. W. AVERY and D. W. KING

The descriptions of colour, texture, structure and consistence are in accordance with the U.S.D.A. Soil Survey Manual, 1951. Horizon designations are after Avery (1964).

Geescroft wilderness (wooded)

L	2-0 cm	Litter layer (mainly current leaf fall).
A	0-4 cm	Very dark greyish brown (10 YR 3/2) slightly stony loam or silt loam; brown when crushed; stones mainly small angular flints and flint pebbles; moderate fine sub-angular blocky and granular structure; friable, soft; irregular penetration of organic matter with corresponding variations in colour and structure; worm casts present; abundant fine woody roots; sharp irregular boundary.
Eb	4-28 cm	Brown (10 YR 4/4-5/4) stony loam with common darker coloured channel fillings and ped coatings, especially in the upper part; few, fine, faint, paler coloured and ochreous mottles locally; stones as above; weak medium to coarse blocky structure; friable to firm; slightly hard; common fine manganiferous concretions; common fine woody roots; narrow boundary.
Blt	28-46 cm	Brown (7.5 YR 4/4-5/6) slightly stony clay with common faint to distinct paler brown and red mottles; stones as above, but generally larger; moderate medium to coarse blocky structure; very firm; very hard; few infilled worm channels; common woody roots; merging boundary.
B2t(g)	46-60+ cm	Strong brown (7.5 YR 5/6) slightly stony clay with common, increasingly distinct, pale brown and red mottles; moderate coarse blocky structure, with smooth shiny cleavage faces; very firm; very hard; fewer roots and channels.

Broadbalk wilderness (wooded)

A	0-10 cm	Very dark greyish brown (10 YR 3/2) stony loam with moderately developed fine sub-angular blocky and granular structure, the latter best expressed in the first 2 cm; stones comprise small sub-angular flints and a few rounded flint pebbles; slightly plastic; non-sticky; friable; abundant fine fibrous and common small woody roots; earthworms throughout profile; slightly calcareous; merging boundary.
---	---------	--

ACCUMULATION OF ORGANIC MATTER

Eb	10–30 cm	Brown (10 YR 4/3) stony loam with moderately developed fine to medium sub-angular blocky structure and with inclusions of very dark greyish brown (10 YR 3/2) more granular material from the surface horizon; stones as above, together with a few very small chalk fragments; non-sticky; slightly plastic; friable; common fine fibrous roots and occasional larger woody roots; very slightly calcareous; narrow irregular boundary.
Eb/Bt	30–40 cm	Brown (7.5 YR 4/4) stony loam to clay loam; stones as above, up to medium in size; moderately developed medium to fine blocky structure; slightly sticky; slightly plastic; friable; few fine fibrous roots; very slightly calcareous; merging boundary.
Bt(g)	40–60+ cm	Reddish brown (5 YR 4/5) stony clay with common, faint, fine, paler brown and reddish mottling; stones as above; moderately developed coarse to medium blocky structure; sticky, plastic; firm; a few fine fibrous roots. (Note that the depth to this horizon varied from 30–75 cm in different holes.)

Broadbalk wilderness (stubbed)

A	0–15 cm	Dark greyish brown (10 YR 3/2–4/2) stony loam with a moderately developed fine sub-angular blocky to granular structure; stones mainly small sub-angular flints with a few rounded pebbles and small chalk fragments; non-sticky; slightly plastic; friable; abundant fine fibrous roots; earthworms throughout profile; slightly calcareous; narrow irregular boundary.
Eb	15–25 cm	Brown (10 YR 4/4) stony loam with a moderately developed fine sub-angular blocky structure; stones as above though more abundant; slightly sticky; slightly plastic; friable; fine fibrous roots common; calcareous; merging boundary.
B1t(g)	25–50 cm	Brown (7.5 YR 4/5) stony clay with common, fine, faint, strong brown and light brown mottling; stones as above; moderate medium blocky structure; sticky, plastic; firm; few infillings from horizons above; few manganiferous specklings; merging boundary.
B2t(g)	50–75+ cm	Strong brown (7.5 YR 5/6) stony clay with distinct, common, fine red (2.5 YR 4/6) and brown (7.5 YR 5/4) mottling, the latter particularly associated with ped faces; stones as above; moderate coarse blocky structure breaking to fine sub-angular blocky; sticky; plastic; firm; few fine fibrous roots; some manganiferous speckling.

REFERENCES

- ALLEN, S. E., CARLISLE, A., WHITE, E. J. & EVANS, C. C. (1968) The plant nutrient content of rainwater. *J. Ecol.* **56**, 497–504.
- ARCHER, E. E. (1956) The determination of small amounts of sulphate by reduction to hydrogen sulphide and titration with mercuric or cadmium salts with dithizone as indicator. *Analyst, Lond.* **81**, 181–182.
- d'ARIFAT, J. M. & WARREN, R. G. (1964) Reducing nitrate by a zinc-ferrous sulphate mixture. *Rep. Rothamsted exp. Stn for 1963*, 63.
- ASHBY, S. F. (1907) Some observations on the assimilation of atmospheric nitrogen by a free living soil organism. *J. agric. Sci., Camb.* **2**, 35–51.