

BK could likewise not be traced to Grotan BK.

Since undiluted Grotan BK as well as fresh prepared dilutions release formalin, positive patch tests may occur in formalin-sensitive patients.

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Table 3. Analysis of test material (Blohm 1959)

	Days of Formalin storage	+/-
Grotan BK 2 % and 5 % pet.	180	+
Grotan BK 2 % aq.	180	+
Grotan BK 5 % aq.	1	+
Grotan BK 5 % aq.	0	+
Grotan BK as is	-	+
Control	-	-

Table 4. Grotan BK 2 % aq. in standard series. Total tested: M: 271 F: 423

	M	F
Grotan BK positive formalin positive:	2	5
Grotan BK positive formalin negative:	1	5
Grotan BK negative formalin positive:	2	4 *

References

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Allergy to lichens with photosensitivity

PER THUNE

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Reports of contact sensitivity to lichens or woodcutter's disease are rare and probably often overlooked or misdiagnosed. Cases have been described by Le Coulant & Lopez (1956) in France and Mitchell (1965) in Canada. Dermatitis from exposure to lichens is most likely to occur in forest workers but people may also be exposed by carrying fire wood, from wood ash, or from lichens used in table decorations and funeral wreaths. Champion (1965) described recurrent dermatitis occurring in a woodcutter's wife. She reacted to wood dust from her husband's clothes containing different lichens. Usnic acid, atranorin and evernic acid, which are related to the furocou-

marans, have been shown to be allergens contained in lichens (Mitchell & Shibata 1969).

My study concerns 10 patients (six males and four females, aged 32-79 years) suffering from dermatitis, particularly on light-exposed sites but sometimes also involving areas not exposed to sunlight, such as the groins, legs and lower part of the trunk. The pattern may be suggestive of an airborne contact dermatitis; however, all patients had a history of photosensitivity. In two patients the rash started in the winter season with little or no sun at all. All patients had an abnormal reaction to longwave UVR on light testing; two patients even showed a papular reaction

to doses as low as 8.4 J/cm² and 7.2 J/cm². On questioning, all patients could relate their symptoms to forest work or to hobbies such as gardening or hunting in the forest. One female patient was the wife of a forest surveyor. Patch testing was performed with dried lichens in petrolatum applied on A1-test® patch (Imeco, Astra Agency Co., Sweden) and secured by porous adhesive tape (Scanpor®, Norgesplaster A/S, Oslo, Norway). The patch tests were applied in duplicate and the test sites examined at 48 h. After removal of the patch tests, one set was irradiated with UVA light (1.2 J/cm²) while the other set was covered with light-proof black paper. Afterwards both sets were left open (but the patients were wearing clothes all the time because of the winter climate). The sites were examined after 1, 2 and 3 days. In six patients a stronger reaction was produced by longwave UVR; one patient had a 3+ reaction after irradiation.

	Patch test results					
	Non irradiated			Irradiated		
	1+	2+	3+	1+	2+	3+
No. of patients reacting	9	11	0	4	5	1

Histologic examination of biopsies from positive patch test sites was typical of allergic contact dermatitis. The species of lichens isolated were: a) *Hypogymnia physodes*, containing atranorin, physodic acid and physodalic acid; b) *Hypogymnia tubulosa* containing atranorin and physodic acid; c) *Pseudovernia furfuracea* containing atranorin and physodic acid; e) *Physcia tenella* containing atranorin; f) *Parmelia sulcata* containing atranorin and salazic acid. The results indicate that lichens can cause both contact and photocontact dermatitis. The responsible allergen(s) are probably atranorin and possibly physodic acid and physodalic acid.

References

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Bleaching of hair by carbamide per hydrate

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In a pharmaceutical factory bleaching of all body hair was observed in three workers who had been involved in the manufacture and packing of powdered carbamide perhydrate. In 17 workers from neighbouring departments visible bleaching of all uncovered hair was noted. The hair of two women workers who had been heavily exposed was examined. Macroscopic examination revealed distal splitting of many hairs in addition to progressive bleaching of the hair of the head. The hair

gave the impression of being in strands and disordered. Microscopic examination showed club-shaped bulging of the hair shaft, cuticular defects, numerous transverse notches in the hair shaft and in some cases trichorrhexis nodosa and pili torti. In 20% dystrophies of the hair roots were found. The vellus hair, eyelashes, eyebrows and pubic hair, also light blond, showed no particular irregularities apart from occasional roughening of the cuticle.

The cost of hairdressing for the affected wo-