

further shown that such population pressure is *sufficient* to produce the depopulation values which were observed experimentally once mitosis was suppressed.

I believe that a theoretical analysis of the type presented is important for several reasons. In a restricted sense, it allows one to tackle the problem of active *versus* passive migration in ways other than having to ask which comes first, mitosis or migration (Potten & Allen, 1975). In a more general context, it presents a way to examine to what extent hypotheses, built on the basis of experimental data, are indeed consistent. The simplistic approach that theoretical models are unrestricted and therefore shapes of curves can be changed at will is probably the result of insufficient understanding of what a theoretical simulation entails, and can only delay the reduction of the degree of subjective interpretation of data derived from biological experiments.

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The prevalence of water-induced itching

SIR, Proposed criteria for the diagnosis of aquagenic pruritus (AP) were recently discussed (Steinman & Greaves, 1984). The condition presents with intense and often extremely distressing pruritis after contact with water that occurs regardless of the water temperature or salinity. There are no observable skin changes. Mental irritability may also be a prominent associated feature. As presently defined, AP is a rare condition. However, we have suspected that itching of the skin after water contact is a common phenomenon. We therefore carried out a simple questionnaire survey to determine the approximate prevalence of water-induced skin itching in a population of dermatology out-patients.

Questionnaires were given to consecutive patients attending general dermatology clinics at St John's Hospital for Diseases of the Skin, London, during the months January to April, 1984. The patients' age, sex and primary dermatological diagnosis were recorded in all cases. The dermatological diagnoses were broadly classified as pruritic or non-pruritic for the purpose of subsequent analysis. The patients were asked whether they had ever noticed redness, rash, itching, prickling or skin dryness after bathing or swimming. Additional questions referred to the duration and severity of the symptoms, their regularity, the effect of water temperature, and the presence or absence of emotional irritability concurrent with the skin itching. We did not attempt to ascribe an exact explanation for the water-induced skin itching in all of the patients. However, if patients' replies suggested that they may have true AP, they were sent a subsequent questionnaire to clarify and amplify their responses.

Completed replies were received from 363 patients (182 male and 181 female), ranging in age from 3 to 75 years. The essential findings are shown in Tables 1 and 2. One hundred and thirty-seven patients (37.7%) reported experiencing itching after contact of the skin with water. However, only 10 of these 137

TABLE 1.

Effect of water	Male	Female	Totals
Itch alone	7	3	10
Itch + *	69	58	127
No symptoms	106	120	226
Totals	182	181	363

* Itch with one or more of: redness, rash or dryness.

TABLE 2.

Effect of water	Dermatological condition		Totals
	Pruritic	Non-pruritic	
Itch alone	5	5	10
Itch + *	95	32	127
No symptoms	100	126	226
Total	200	163	363

* Itch with one or more of: redness, rash or dryness.

mentioned itch as their only symptom after water contact. The other 127 patients experienced various additional concurrent symptoms (i.e. redness, rash, or dryness). This suggests, but does not prove, that their itching may have had a cause other than true AP. Possible explanations include exacerbation by water of a pre-existing pruritic dermatosis (such as eczema), or other conditions known to be associated with itching after contact with water. These conditions include aquagenic, cholinergic, cold, or heat urticaria; symptomatic dermographism, or polycythaemia rubra vera (Greaves *et al.*, 1981).

Further evaluation of the ten patients who reported itching as their only symptom after water contact suggested that none had AP. Five had a pruritic dermatosis which may have explained their itching after water. The other five, without a pruritic dermatosis, had one or more factors distinguishing their symptoms from those of AP. These included (1) the brief duration of pruritus (e.g. 5 min or less), (2) the pruritus was not noted consistently every time they bathed or swam, (3) water temperature significantly affected the severity of the pruritus, or (4) the itching was only mild in severity.

In evaluating the questionnaire responses, we assumed that those patients (totalling 127) reporting redness, rash, or dryness concurrent with itching after water contact could not have AP. They were therefore not evaluated further. It must be acknowledged, however, that some of these patients may have been referring to the above skin changes in areas anatomically distant from those experiencing pruritus. Thus, cases of true AP may have been overlooked in this group.

We have shown that itching of the skin after water contact is a common symptom among dermatology out-patients. However, we were unable to identify a single case of AP, as currently defined, in this survey of 363 patients. AP thus appears to be an uncommon condition among dermatology patients, but a reliable measure of the prevalence of AP in the general population cannot necessarily be inferred from this study of a population of skin disease sufferers. Whereas true AP appears to be rare, it is probable that there are

patients who experience itching of the skin after water contact, but to a milder degree than that required for the diagnosis of AP.

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Treatment of acne with isotretinoin

SIR, In their letter entitled 'Remission rates in acne patients treated with various doses of 13-*cis* retinoic acid (isotretinoin) (*British Journal of Dermatology* 1984, **111**, 123-124), Drs Cunliffe and Jones quote their previous paper (Jones, Greenwood & Cunliffe, 1983) in which they predicted that doses lower than 0.05 mg/kg/bw should be sebo-suppressive and of benefit in patients with mild acne.

Whilst agreeing with this prediction the authors and the manufacturers now think that only severe acne should be treated, and not mild acne at the lower doses. The benefit/risk ratio would not be justified in view of the fact that a non-teratogenic dose in humans has not been established and the risk would be increased in view of the greater patient exposure.

Drs Jones and Cunliffe stress the importance of obtaining a maximal clearance of severe acne using a 1 mg/kg/bw daily dose, thus also lessening the risk of relapse and the need for further treatment.

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- JONES, D.H., GREENWOOD, R. & CUNLIFFE, W.J. (1983) The dose-response relationship of sebum suppression to 13-*cis*-retinoic acid therapy in severe acne. *British Journal of Dermatology*, **109**, 366.

The investigation of patients with genital warts

SIR, Patients with genital warts who are referred to dermatologists seldom receive a comprehensive examination and investigation of the lower genito-urinary (g.u.) tract, unless the physician elicits symptoms of g.u. disease. However, Kinghorn (1978), in a study of patients with genital warts attending a department of g.u. medicine, found evidence of an additional genital infection in approximately one-third of the men and two-thirds of the women. Patients attending a department of g.u. medicine are largely self-selected and may represent a high-risk group for sexually acquired diseases compared with those referred by their general practitioner to a dermatology department. We therefore studied the latter group of patients to determine the incidence of additional genital infections in this population.

A total of forty-seven patients with genital warts were referred to the dermatology department during a period of 1 year; twenty-five unselected patients from this group were seen by two of us (GMF and BNS); all twenty-five patients, regardless of the presence or absence of additional g.u. symptoms, were referred to the department of g.u. medicine for investigation.

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