Starting from a point eight to ten feet from the duodeno-jejunal flexure and extending to the lower end of the sigmoid colon were many submucous haemorrhages similar in size to those visible on the peritoneal surface. They were most striking and numerous towards the distal end of the small intestine, where there was a perforation about three feet from the ileo-caecal valve. The degree of haemorrhage around the perforation was not enough to suggest that the latter had resulted from the weakening of the intestinal wall by an extravasation of blood. In the colon many of the haemorrhages were more diffuse, and over a particularly extensive one the mucosa had ulcerated.

C.N.S.—The brain was examined and found to be healthy.

During the course of the necropsy the abdominal wall was examined for intramuscular haemorrhages, but none was found.

Histological preparations were made from the lungs and small intestines. In the lung were found scattered intra-alveolar haemorrhages and oedema, separated by patches of normal tissue and areas of congestion with haemorrhage limited by the alveolar walls. In the oedematous patches there were many carbon particles and some basophilic debris. Many macrophages were present dealing with these foreign bodies, which were attributed to the inhalation of sea-water and fuel oil. Sections of the ileum showed the haemorrhages to be most severe in the submucous and subperitoneal layers of the intestines, but haemorrhages into the muscle layer were also observed. The sections showed that the haemorrhages were more diffuse than was expected from the naked-eye appearance of the gut. At the site of the perforation there was haemorrhage into the adjoining tissue, but not a great deal.

Discussion on the Post-mortem Findings

The patient suffered from ether convulsions during the laparotomy, and at the time of his immersion in the sea he inhaled sea-water, so we must attribute the oedema and congestion of the lungs to these; but the haemorrhages were similar to those which we have learnt to associate with bomb blast and which have been described a number of times in the literature.

There have been descriptions in the literature of abdominal injuries as the result of explosions at sea under circumstances similar to those in this instance. The interest of this case is that, when the above post-mortem findings are borne in mind, we can trace the course of events in the other patients of this series who recovered.

Note on Examination of Fish Killed by Depth Charges

No experiments were carried out to study injuries produced in mammals by underwater blast, but three fishes killed by depth charges were examined. Two of them did not show any naked-eye injuries either in the body cavity or in the brain, but one had an extensive extravasation of blood in the posterior part of the coelom. We are indebted to Surgeon Commander Button, R.N., and Surgeon Lieut.-Commander Carleton, R.N., for obtaining these specimens for us.

Summary

Sudden compression waves produced by torpedo and depth-charge explosions in ten patients showed their chief effects in the abdomen and caused subperitoneal and submucous haemorrhages and lacerations of the intestine. There was clinical evidence of submucous haemorrhages, shown by haematemesis and melaena in ten patients.

Seven patients recovered completely without operation; two others recovered after drainage of a pelvic abscess in one and after drainage of a subphrenic abscess and an empyema in the other; one patient died after an operation for a tear of the small intestine; the post-mortem results are described in detail. In addition to the abdominal injuries blast effects in the lung were seen. In none of the other nine patients were there symptoms or signs of severe blast lung injury, apart from a little haemoptysis in one.

The immediate symptoms after sudden compression were not severe.

The presenting symptoms were vomiting with blood in the vomit, diarrhoea with melaena, and considerable testicular

pain in four cases. The last-mentioned symptom was probably due to a direct compression effect. Abdominal tenderness and slight rigidity were present for several days in the nine surviving patients.

There was no external bruising in any patient.

As none of the patients were seen in the first twenty-four hours it is difficult to assess the indication for immediate operation. In the one case with a perforation, the indication of a spreading peritonitis led to a laparotomy on the third day, though it is recognized that this is always a bad time for operation. In the two patients who developed abscesses it is possible that these followed the permeation of organisms through a contused bowel wall.

The results justify the adoption of a conservative management of such patients, especially if seen after twenty-four hours.

In neither of the two abscess cases were there positive indications demanding immediate laparotomy.

We must record the devoted care given at sea to these patients by Surgeon Lieut. J. B. MacIntosh, R.N.V.R., and Surgeon Lieut. R. Aston, R.N.V.R., and thank them for their accurate records, made under great difficulties.

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ACUTE RELAPSING DERMATITIS DUE TO NAIL VARNISH

BY

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In view of the extensive use of nail varnish the following record of a case of nail lacquer dermatitis may be of interest.

Case Report

The patient, a married woman aged 37, was referred to me by her medical attendant on November 6, 1941, with the following history. Nine weeks earlier "three or four red patches appeared on the right side of the face over the mandible and spread thence to the neck. An application of linimentum calaminae cleared these up in about a week, but a few days later they recurred in the same situation, spreading upwards over the right half of the face and producing oedema of both eyelids, associated with erythema and superficial exfoliation. Before this attack had completely subsided it was followed by a third, which spread downwards on the neck in articulated patches. These coalesced, and suggested, when the ears became affected, a picture resembling seborrhoeic dermatitis. On November 1 the rash had spread to the left side of the face and to the flexor aspects of both forearms, but neither the hands nor the fingers were involved." The patient confirmed these observations and stated, further, that she had had several attacks of hay-fever due to grass pollens in previous years, and one attack of dermatitis attributed to tulips, thus testifying to an allergic diathesis.

On inspection the main site of her present attack was on the right side of the face and neck, with subsiding oedema of both eyelids and slight exfoliation of the right auricle. The scalp, forearms, and hands showed no sign of inflammatory response, but there were two small symmetrical patches of diffuse dermatitis with erythema and branny scaling in both popliteal spaces. (The significance of these will become evident at a later stage.)

The rash was evidently an allergic response to some external antigen, although, as in so many of these cases, the actual agent was not suspected by the patient. While I was cross-examining her as to her habits in the use of cosmetics, her hobbies, and her pets, etc., I was struck by two very obvious facts—the high degree of polish on her carmine-dyed finger-nails, and her tendency to rest the right cheek and chin against the dorsal surface of her right hand, held in a semi-clenched position so that her fingers and finger-nails were in direct contact with the

parts primarily affected. Questioned as to her sleeping posture, she immediately added the left hand to her right and tucked both dorsal surfaces over and under the right side of the chin. At this stage I confided my suspicions of the cause to both the patient and her husband. They were unusually interested and co-operative, and it then transpired that every relapse had occurred at the week-end a few hours after applying a fresh coat of the paint. I was puzzled by the patches in the popliteal spaces, but the explanation was forthcoming a fortnight later when I rang up to ascertain progress. There had been no further attacks following drastic removal of the cosmetic with a "remover" supplied by the makers. The dermatitis and discomfort had almost completely cleared up, and so had the patches behind the knees, which were evidently the result of repeated application of a *colourless* nail varnish known to most women to have the property of checking the "laddering" in artificial (viscose) silk stockings, which of course have their origin in a nitrocellulose matrix.

Commentary

My patient had therefore confirmed the diagnosis by the simultaneous application of unsolicited patch tests, and incidentally had proved that the sensitizing agent was not the pigment but some other substance incorporated in the solution conveying it. A reference to H. Goodman's (1936) comprehensive textbook on cosmetics revealed how complex such mixtures have nowadays become, and in a recent instructive paper by Drs. Osborne, Jordon, and Campbell (1941) it is emphasized that "nail lacquers are highly complex mixtures containing a large number of potential eczematizing substances." They append a list, which includes (a) the cellulose (gloss-maker) nitrates, of various viscosities; (b) the solvents (e.g., methyl, ethyl, butyl, or isopropyl alcohols, and acetates—glycol monoacetate, toluol, acetone, etc.); (c) the plasticizers, which ensure a degree of elasticity and adhesion to the gloss and prevent cracking and splitting—many of these are resins or gums, stearates or benzoates, resorcinol or phenyl compounds, often implicated in the genesis of trade dermatitis; (d) the pigments, which these authors tend to exculpate in that respect; and, finally, (e) perfumes, which are similarly exonerated.

The known irritants are nearly always to be found in the first three groups; but the number and variety of these render identification of the exact antigen both difficult and laborious, nor is there any necessity to determine it from the dermatological angle. It is sufficient to prove that the offending agent was a nail lacquer and to remember that varnishes and lacquers are being increasingly used in standardized commercial products of many kinds as a protective coat or finish. Common examples include patent and imitation leathers, handbags, purses, belts, wrist-straps, playing-cards, vanity cases, hair-pins, toys, buttons, and waterproofed fabrics. All or any of these have caused a localized dermatitis at various times and in various situations, but the chances of trouble are great when the human body itself is subjected to the process, as in varnishing the nails. Brittleness, fissuring, and fracture have often been reported as purely local effects on the nail-plate, but the allergic manifestations which might conceivably arise in any area contacted by or within reach of the nail have not as yet received much attention in this country. In the paper by Osborne *et al.* an analysis of 100 cases demonstrates that there was a preferential involvement of the eyelids (78%). In 40 of these cases other parts of the integument were also involved, and the order of their frequency was: the neck, cheeks, and nose, shoulders and chest, pinna, lips, and mouth-angles, chin, external auditory meatus, trunk and thighs, arms and forearms, forehead, anogenital areas, fingers, and dorsa of the hands. It is suggested that pruritus vulvae may have this aetiology in

occasional cases, and where obvious causes are so rare the possibility is worth bearing in mind.

Before leaving the question of localization it might well be asked why, if nail lacquer causes dermatitis, the soft tissues adjacent to the nail-plates and the dorsal surfaces of the distal phalanges are so seldom involved. The point is not raised by Osborne *et al.*, but it might be answered that every woman who varnishes her nails takes good care to confine the operation to the nail substance, that the hands are more often washed than any other part of the body, and that the cuticle, as compared with other areas, is covered with relatively thick and resistant horny material, possibly toughened by its continual subjection to trauma with the nail-brush and manicure instruments. Unless the fingers were constantly crossed there would be little opportunity of mutual contact.

The type of dermatitis encountered was "erythematous-squamous." Macroscopic vesiculation was not seen, although oedema of the eyelids was a common association, nail lacquer being the most frequent cause according to the authors. In one of their cases (as in mine) "a patch of dermatitis appeared on the patient's leg after she had applied nail polish to stop a run in her stocking."

The value of patch tests is thoroughly discussed by Osborne *et al.* Many cases appear to have given a negative response when the lacquer was applied to areas at a distance from the original reaction, and in these authors' opinion "there is no substitute for careful clinical observation following withdrawal of the offending allergen." The frequency of nail lacquer dermatitis in the United States is proved by the lively discussion which followed the reading of their paper, in which several well-known dermatologists took part.

Summary and Conclusions

A clear case of relapsing dermatitis due to repeated contact with nail varnish suggests—considering the popularity of that cosmetic in this country—a careful watch for a similar aetiology among the many cases of unexplained facial dermatitis in women, and even in cases in which the reaction is not confined to that area.

The use of a nitrocellulose lacquer on toys and other objects handled by children should not be forgotten when allergens for obscure labial, facial, or digital dermatitis are being sought.

As the regional distribution and the type of reaction are by no means limited or specific it may repay the examiner to take special notice of the degree of ungual gloss in any case of dermatitis—*de causa ignota*—in women, or for that matter in men too, for one of the American authors' 100 cases was in a male.

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The sixteenth annual general meeting of the Association of Special Libraries and Information Bureaux was held at the Royal Institute of British Architects, London, on December 13. The chair was taken by the president, Sir Harry Lindsay, director of the Imperial Institute, whose introductory remarks touched on the widening scope of the association's activities, a subject further developed by Mr. E. J. Carter, the honorary secretary, in his review of the year's work. Membership remained steady and publications continued as usual. New opportunities for service arising from war conditions had been seized, among which was the investigation into the location and supply of scientific and technical periodicals now reaching the country from enemy and enemy-occupied territories, a survey carried out under the auspices of the Royal Society and the Rockefeller Foundation. Details of the information thus compiled can be had from the ASLIB office at 31, Museum Street, W.C.1.