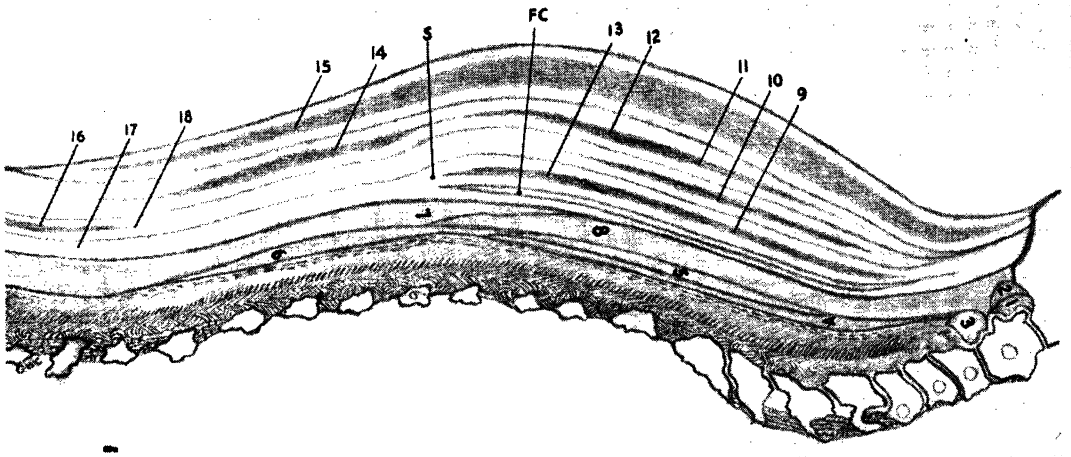

FIG. 1. Fasciae dorsi: 1, rectus capitis posterior minor; 2, rectus capitis posterior major; 3, obliquus capitis inferior; 4, semispinalis cervicis; 5, longissimus capitis; 6, semispinalis dorsi; 7, longissimus dorsi; 8, semispinalis capitis; 9, splenius capitis; 10, serratus posterior superior; 11, rhomboideus minor; 12, rhomboideus major; 13, splenius cervicis; 14, latissimus dorsi; 15, trapezius; 16, serratus posterior inferior; 17, lumbodorsal fascia (dorsal layer); 18, interserratus fascia; *FC*, fascial cleft; *S*, splenius fasciae formed by subdivision of lumbodorsal. (All fasciae schematically accented.)

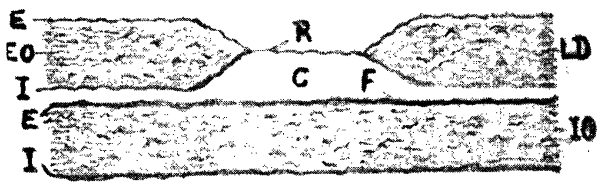

FIG. 2. *E*, External fascia of muscle; *EO*, abdominal oblique, external; *I*, internal fascia of muscle; *IO*, abdominal oblique, internal; *LD*, latissimus dorsi muscle; *R*, roof fascia, trigone (Petiti); *F*, floor fascia, trigone (Petiti); *C*, fascial cleft.

which are universally accepted as proved and require no comment in this critical review for unreported findings. In some bodies we found the trigonum lumbale covered by a roof of conjoined fascia projected laterad from both surfaces of the latissimus dorsi muscle. This laminal roof was split again at the external abdominal oblique to form its external and internal vaginal fasciae. Under this internal fascia and roof fascia was a shallow but sometimes well-defined fascial cleft. The external fascia covering the internal abdominal oblique was found, in these cases, to be the floor fascia of the trigone. A transverse section of the trigone is schematically shown in Fig. 2.

These findings disagree with current concepts and texts, being present in 2 of the 15 adult bodies, as well as in all the infants. The integrating geriatric changes or adhesions incident to muscular rheumatism (fibrositis) may account for statuses that commonly create the illusion of a single fascial layer filling in the trigonum lumbale (Petiti). In 86.6% of our material such integration by fusions or adhesions of fascial components was found in Petit's triangle, but always in adults of advanced age. The two-layered pattern was present in 100% of infants in whom the fascial planes are obviously in the more basic or relatively primordial status of freshness.

Studies upon the serratocostal fascia were included upon 21 cadavers (42 sides), but findings were essentially the same as those found in current literature. We are urged, nevertheless, to accent a circumstance thus far all but universally ignored: the anatomical and surgical significance of the large fascial cleft filled in by this fascia. It is one of the largest in the human body and designed to enhance efficiency of scapular mechanics. In some subjects it was the largest intermuscular fascial cleft, considering both depth and radii of peripheral expansions.

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A Simple Method for Staining Trypanosomes and Plasmodia of Malaria in Tissue Sections

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A simple, rapid, and dependable method for staining trypanosomes and plasmodia in fixed tissues used by us has been found more efficacious than other methods tried. Hewitt (*1*), commenting on the inadequacy of previously used stains for malaria in tissue sections, recommended a modified Giemsa staining technique, and Shortt and Cooper (*2*) have recently made use of their own modification of this technique. Tomlinson and Grocott (*3*) reported good results for malaria, leishmania, and other parasites by their own technique. Black (*4*) adapted Leishman's stain for malaria.

We have had considerable success in demonstrating malarial plasmodia in tissue sections using the Kingsley stain as originally described (*5*), but with a modification of technique we have found that the stain gave superior results in the demonstration of trypanosomes in tissue sections. Tissues of rats infected with *Trypanosoma equiperdum* and tissues of

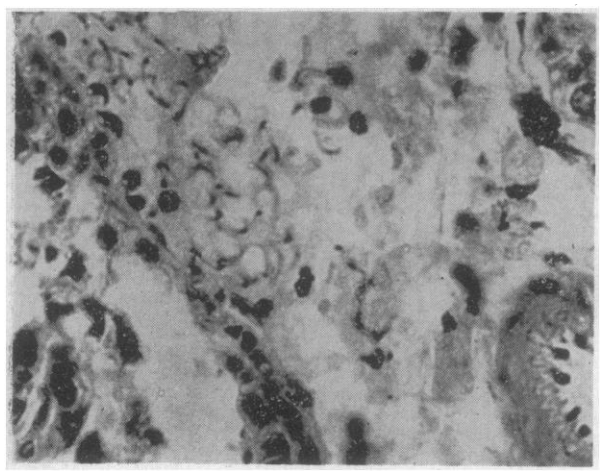

FIG. 1. Rat liver containing *Trypanosoma equiperdum* inside a blood vessel. × 525.

canaries with *Plasmodium cathemerium* were employed. Small pieces of tissue were fixed in Helly's fluid for 10–12 hr and then washed for 24 hr in running water. The tissues were passed through graded concentrations of ethanol, terminating in absolute ethanol. In order to replace ethanol by butyl alcohol, tissues were passed through graded concentrations of butyl alcohol in ethanol, finally terminating in pure butyl alcohol. By this means, shrinkage of parasites in the tissue is avoided. From pure butyl alcohol the tissues were embedded in paraffin and 5 μ sections were cut.

To demonstrate trypanosomes the slides were stained with equal parts of Kingsley I and II for 5 min and quickly rinsed in two changes of distilled water. The sections were then dipped momentarily in acetone, acetone with eosin, butyl alcohol, followed by three changes of neutralized xylol; clarite was used for mounting. The Kingsley technique of development of a pink color by use of distilled water acidified with acetic acid could not be used because in the preparations described above the coloration of the parasites is totally lost. For this reason, eosin was added to the acetone to potentiate the red cytoplasmic stain of the tissues. Following this procedure the blue-staining trypanosomes were sharply and clearly demarcated.

A section of rat liver with trypanosomes in a large blood vessel is shown in Fig. 1. Because of the length of the organism it is difficult to find parasites in the exact plane necessary to demonstrate photographically what can readily be seen microscopically. The nucleus of the organism stains strongly basophilic, and the cytoplasm appears a lighter blue. Undulating membranes and blepharoplasts are not easily seen.

In staining for malarial plasmodia in sections the same technique is used. After staining, however, the tissues are differentiated for a few seconds in a solution of 1% acetic acid. The slides are then passed through acetone, to which a few drops of eosin solution has been added, followed by butyl alcohol and xylol, after which they are mounted.

The result of this method is shown by a section of bird's breast muscle with numerous nucleated red cells, many of which contain from 1 to 5 trophozoites (Fig. 2).

The Kingsley stain is commercially available as Kingsley I and II or it can be made according to Kingsley's directions. Equal parts of each solution are mixed immediately before use. This stain is excellent for the differential staining of blood and bone marrow films, as well as for blood-borne parasites, such as trypanosomes and malaria. It gives better results in tissue sections of bone marrow than any of the other stains tried by the authors. The Kingsley stain has certain definite advantages over most hematological stains and deserves a much wider use.

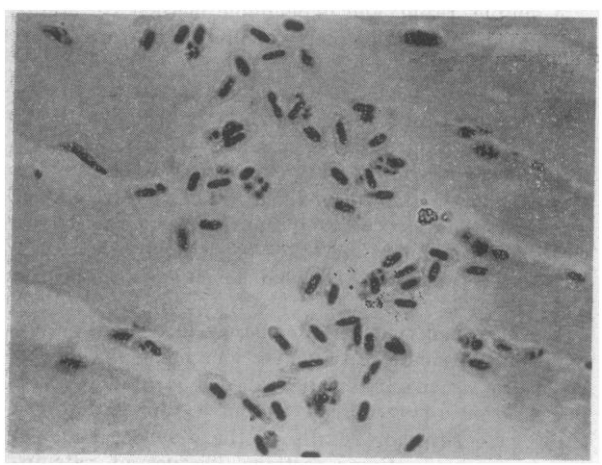

FIG. 2. Canary breast muscle with *Plasmodium cathemerium* inside avian red cells. × 525.

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The Irradiation-Induced Autoxidation of Linoleic Acid[1]

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In a recent paper, Dubouloz (*1*) stated that peroxides are produced in the skin lipids of animals subjected to x-irradiation and other injury. Consideration of possible mechanisms for this effect and the knowledge that the essential fatty acids, which are universally present in the animal body, autoxidize readily by a free-radical mechanism with the production of peroxides (*2*) have led to the investiga-

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