

# McCraw and Arnold's Atlas of Muscle and Musculocutaneous Flaps



John B. McCraw  
Phillip G. Arnold



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Page 242, figures 5-6 from Arnold, P.G., Pairolo, P.C., and Waldorf, J.C. "The serratus anterior muscle: Intrathoracic and extrathoracic utilization." *Plast. Reconstr. Surg.* 173: 240-246.

Pages 514-521, figures 21-36; pages 533-534, figures 59-62; and pages 572-573, figures 31-36 from Arnold, P.G. and Mixter, R.C. "Making the most of the gastrocnemius muscles." *Plast. Reconstr. Surg.* 72: 38-48.

Pages 91-93, figures 43-47 from Rosen, H.M. "The extended trapezius musculocutaneous flap for cranio-orbital facial reconstruction." *Plast. Reconstr. Surg.* 75: 318-327.













TAB. X.

FIG. I.

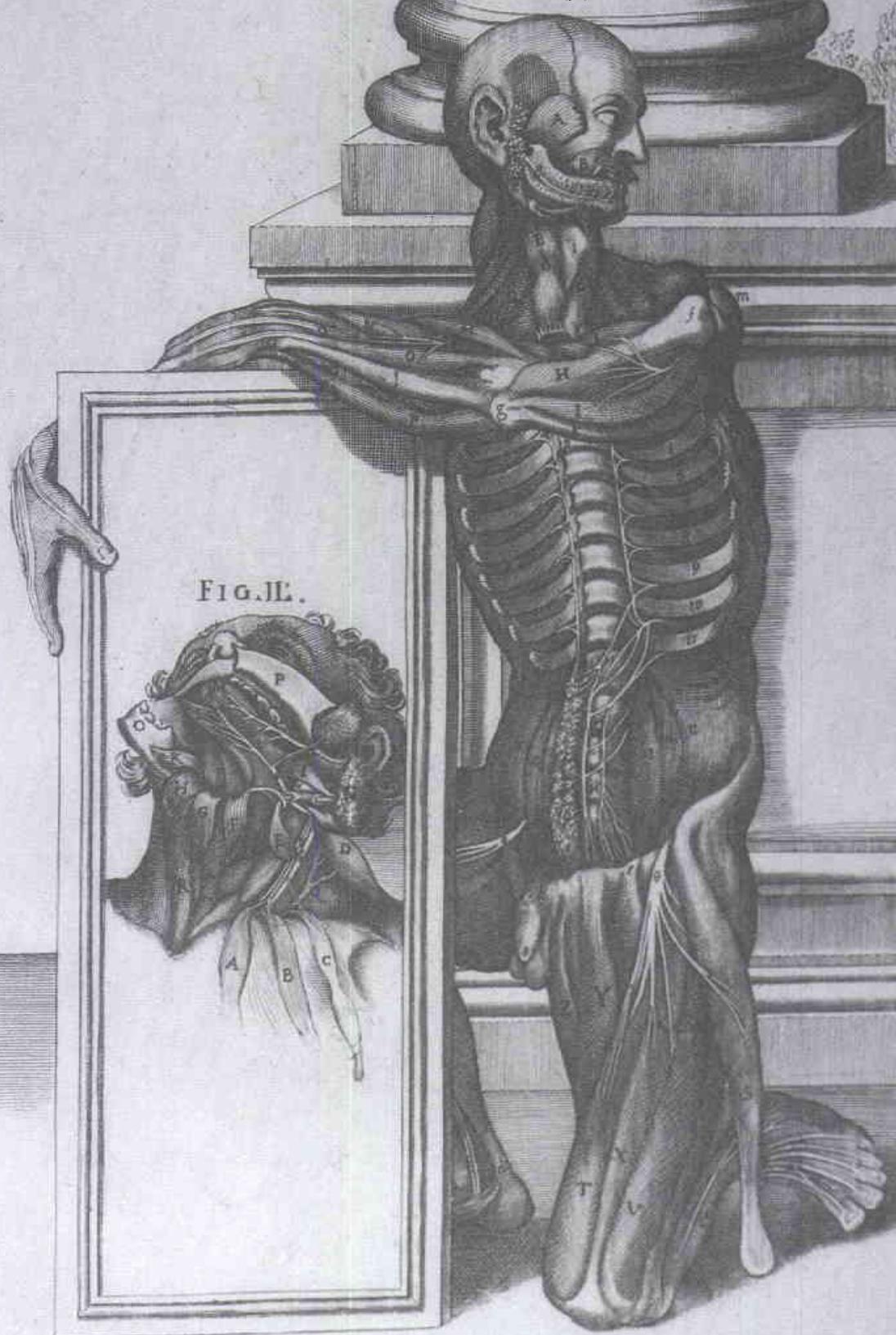
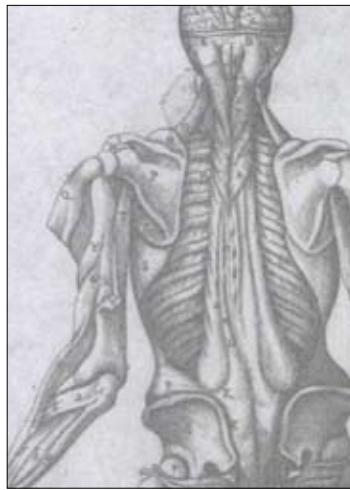


FIG. II.





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