$$\int_{\delta_{g+i}} \varphi_a = 2\pi\sqrt{-1} \sum_{\lambda} a_\lambda \cdot (\omega_i / dz_\lambda)(p_\lambda),$$

i.e., the map ψ is given by the matrix

$$\begin{bmatrix} (\omega_1/dz_1)(p_1) & \cdots & (\omega_1/dz_d)(p_d) \\ \vdots & & \vdots \\ (\omega_g/dz_1)(p_1) & \cdots & (\omega_g/dz_d)(p_d) \end{bmatrix}.$$

Γ $\omega = \omega_i$. $\eta = \varphi_a$

$$\omega(z_\lambda) = \Big(\underbrace{(\omega/dz_\lambda)(p_\lambda)}_{b_0^p} + b_1^p z_\lambda + \cdots \Big) dz_\lambda$$

$$\sum_{i=1}^{g} (\Pi^i N^{g+i} - \Pi^{g+i} N^i) = 2\pi\sqrt{-1} \sum_{p,j} \frac{a_{-j}^p \, b_{j-2}^p}{j-1} \qquad \text{by P240} \sim \text{P241.}$$

$$\int_{\delta_i} \varphi_a = 0 = N^i = 0$$

$$\Rightarrow \quad N^{g+i} = 2\pi\sqrt{-1} \sum_{p,j=2}^{n=2} \frac{a_{-j}^p \, b_{j-2}^p}{j-1} = \int_{\delta_{g+i}} \varphi_a$$

$$= 2\pi\sqrt{-1} \sum_{p_\lambda} a_\lambda \left(\frac{\omega_i}{dz_\lambda}\right)(p_\lambda)$$

$$= 2\pi\sqrt{-1} \sum_{\lambda} a_\lambda \left(\frac{\omega_i}{dz_\lambda}\right)(p_\lambda)$$

$$\Rightarrow \psi(\varphi_a) = \Big(\int_{\delta_{g+i}} \varphi_a \Big) = 2\pi\sqrt{-1} \Big(\sum_\lambda a_\lambda \left(\frac{\omega_i}{dz_\lambda}\right)(p_\lambda) \Big)$$

$$= \Big(\sum_\lambda a_\lambda \left(\frac{\omega_1}{dz_\lambda}\right)(p_\lambda), \ \sum_\lambda a_\lambda \left(\frac{\omega_2}{dz_\lambda}\right)(p_\lambda), \cdots, \sum_\lambda a_\lambda \left(\frac{\omega_g}{dz_\lambda}\right)(p_\lambda) \Big)$$

$$= \begin{pmatrix} \left(\frac{\omega_1}{dz_1}\right)(p_1), & \left(\frac{\omega_1}{dz_2}\right)(p_2), & \left(\frac{\omega_1}{dz_3}\right)(p_3), & \cdots & \left(\frac{\omega_1}{dz_d}\right)(p_d) \\ \vdots & \vdots & \vdots & & \\ \left(\frac{\omega_g}{dz_1}\right)(p_1), & \left(\frac{\omega_g}{dz_2}\right)(p_2), & \left(\frac{\omega_g}{dz_3}\right)(p_3), & \cdots & \left(\frac{\omega_g}{dz_d}\right)(p_d) \end{pmatrix} \begin{pmatrix} a_1 \\ \vdots \\ a_d \end{pmatrix}.$$