$$
(8) \qquad \begin{array}{cccc}
a_{11} & \cdots a_{1,\,n-2} & 0 & 0 \\
\cdot & \cdot \quad \cdot \quad \cdot & \cdot & \cdot \\
a_{n-2,\,1} & \cdots a_{n-2,\,n-2} & 0 & 0 \\
a_{n-1,\,1} & \cdots a_{n-1,\,n-2} & a_{n-1,\,n-1} & 0 \\
a_{n,\,1} & \cdots a_{n,\,n-2} & a_{n,\,n-1} & a_{nn}.
\end{array}
$$

When equation (3) is integrable by quadratures this process can be continued n times; the group we are considering (which is isomorphic with the group of rationality) takes the form

$$
(9) \qquad \begin{array}{lllll}
a_{11} & & & & \\
a_{21} & a_{22} & & & \\
a_{31} & a_{32} & a_{33} & & \\
\cdot & \cdot & \cdot & \cdot & \cdot \\
a_{n-1,\,1} & a_{n-1,\,2} & \cdots a_{n-1,\,n-1} & & \\
a_{n,\,1} & a_{n,\,2} & \cdots a_{n,\,n-1} & a_{n,\,n}. &
\end{array}
$$

But (Lie-Engel, Transformationsgruppen I, chapter 27) the group (9) is an integrable group.

The Jordan-Beke condition for reducibility, employed above, is both necessary and sufficient. We have thus deduced as a special case of the Jordan-Beke theorem the theorem of Vessiot, namely, "*the necessary and sufficient condition that a linear homogeneous differential equation shall be integrable by quadratures is that its group of rationality be integrable.*"

PHILADELPHIA, PA.
August, 1902.

THE CENTENARY OF THE BIRTH OF ABEL.

AT the close of the first week in September last, the Royal Frederick University at Christiania, Norway, celebrated the one hundredth anniversary of the birth of Niels Henrik Abel. The occasion was noteworthy as the first international academic celebration in Norway and was in every way instructive and enjoyable for the delegates and guests of the university. On their arrival at the station they were met by representatives of the university who had been previously instructed as to which language each of them spoke and who conducted them to the rooms to which they had been assigned in the various hotels,