of low pitch (the residue)
n of the basilar membrane
tones gives the perception

ore[illegible]eply into the forms
f colour" of the ear might
zed [6]). We shall, however,
conceptions about a local
ar membrane in principle
bility that a periodicity
of harmonics should occur
this stimulus.
nsider a mechanical model
which consists of a system
s [illegible]progressive charac-
d of harp). For the sake
e that the sensitivity of
same, and that the width
for all resonators is equal
ge of the characteristic
n ideal periodic impulse is
system, the spectrum of
. Each of the harmonics
le region of resonators to
e excitation curves which
om figs. 8*a* and *b*. In *fig. 9*
on curves are drawn on a
ale for the first 20 har-
onics the excitation curves
ther[illegible]ore and more, or in
tor will react simultane-
arger number of adjacent
that for low frequencies.
rves do not yet overlap
timulation alternate with
ulation is practically zero.

J. F. Schouten, Proc. Ned.
1086, 1938; **43**, 356, 1940 and **43**
lishe[illegible]

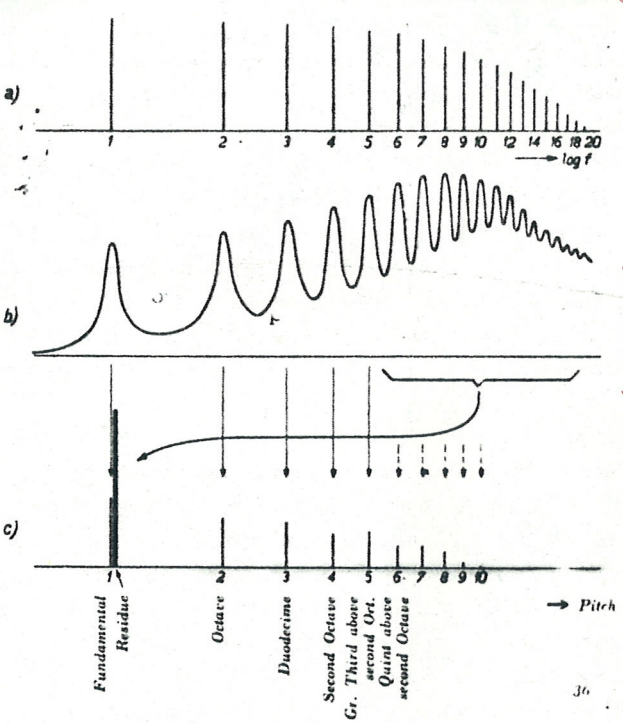

Fig. 10. Diagram of the occurrence of the subjective sound spectrum.
a) The objective spectrum of a periodic impulse with a width equal to 1/20 of the length of the period.
b) The stimulus caused by this impulse on the basilar membrane.
c) The subjective spectrum in which the ear analyses the stimulus represented by (*b*). The stimuli coming from those parts of the basilar membrane upon which the higher harmonics are localized are perceived collectively as a component of low pitch, the residue.

Applications of the hypothesis of the residue

We shall now discuss several remarkable phenomena in which the hypothesis or the residue can be applied.

Anharmonic sounds

While in the case of stringed and wind instruments, in which strings and air columns.

J. F. SCHOUTEN, The perception of pitch, in: Phil. Techn. Review Vol. 5, 1940, 286-294 Fig. 10 S. 292