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(2015)

Life Between Tidemarks on Rocky Shores
from Manual of Harmonic Analysis
& Prediction of Tides

One afternoon, several years ago, I found in a box on a street nearby my Venice home 'Special Publication No. 98 (rev. 1940) of the U.S. Department of Commerce, Coast And Geodetic Survey: Manual Of Harmonic Analysis And Prediction of Tides.' Three hundred seventeen pages of dry text and tables contrasted starkly with images conjured by the sea green cardstock they're sewn into. But I heard music in its title. Nevertheless, trying to correlate its principles with periodic harmonic structures, applying formulae of diverse (and complex forces) to derive simple harmonic motion, soon seemed naïve. When it occurred to me, however, that all of life is dependent upon this phenomenon and how it, in all of its abundance, evolves differently, I better understood what the book was really about. A palpable sense of that can be seen in the beautifully detailed illustrations of coastlines made by Alan Stephenson in the 1940s for his zonation studies, and published posthumously by his wife Anne Stephenson in 'Life Between Tidemarks On Rocky Shores' (1972). While Stephenson's drawings, were very much in my mind as I composed, their meaning found underlying sense through the mathematical structures explained in Paul Shureman's harmonic analysis and tide prediction manual.

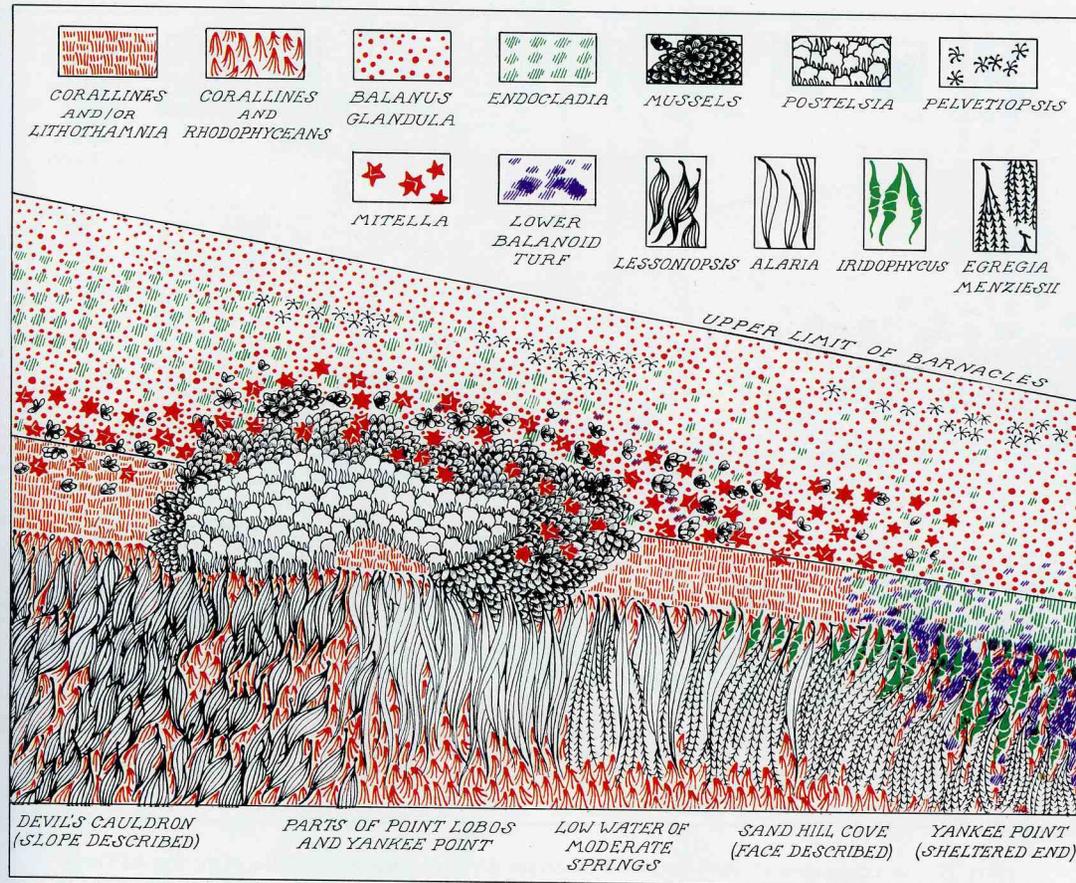
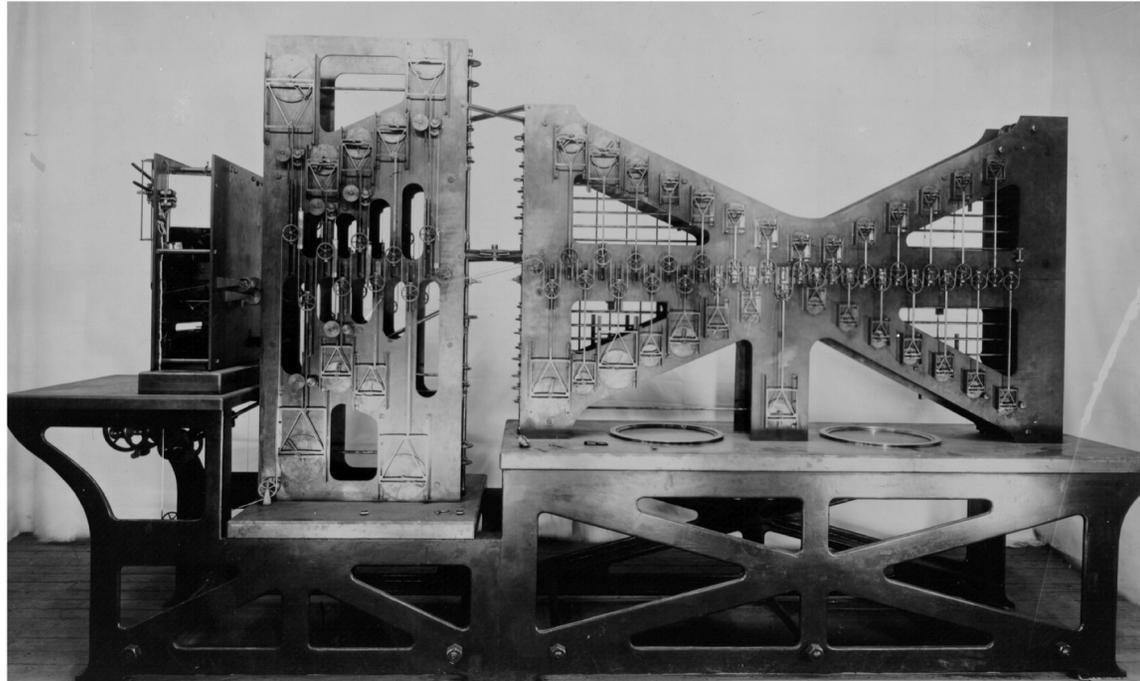


PLATE 16. A comparison of the zonation of steep slopes at different localities in the Pacific Grove region. The various slopes are subject to different types and degrees of wave action. The line across the centre of the figure indicates the boundary between the upper and lower balanoid zones. Compare Plate 17.



A great deal has changed in the seventy-five years since those books documented tidal behavior and the coastal life that thrived because of it; Stephenson's drawings testify as much to that. And while it is really the concepts behind the Jules Verne-like contraptions invented to measure the level and flow of the oceans that ignited my inspiration (Harris-Fischer Tide Predicting Machine, 1910, time-view, above), Stephenson's pictures showing life from the infralittoral to supralittoral zones on diverse shores is almost as exciting as seeing evidence of life on a distant planet. That is also, it seems to me, what music sometimes is.

**harmonics & **almost tacit tones* suggest qualities as much as actual performance instructions. If the option is taken not to play harmonics, then the touch should try to emulate that sonority as best as possible; harmonics should always sound as if they are an overtone heard from the preceding pitch or pitches, but activated from either the string two octaves below or 12th (octave and fifth). An almost tacit sounding note must be produced as a feeling that the pianist is interpretively satisfied with in its context.

During the process of composing I found myself becoming more and more fussy about dynamic shadings and nuances. Equally, I began feeling to be hampering the music and pianist of many interesting possibilities and decided to eliminate most markings. Nevertheless, I do have very specific ideas and attitudes about both the music and the piano, and understanding them will help inform an interpretive approach. Piano tone is, above all, of primary importance: soft (*p* and quieter) should never be anemic, and loud (*f* and louder) should never distort or thunder; it should never be gratuitous. I favor dynamics on the softer side, reserving louder ones when they are necessary; thus a broad range of nuanced voices with minimal pedaling will produce the best musical results.

Life Between Tidemarks on Rocky Shores

Pt.1 from Manual of Harmonic Analysis and Prediction of Tides

♩. = 88

Piano

Measures 1-5 of the piano score. The right hand melody consists of quarter and eighth notes with rests. The left hand provides a bass line with quarter and eighth notes. A circled asterisk (*) is placed above the note in measure 4. Measure 5 features a 9/16 time signature change.

6

Pno.

Measures 6-9 of the piano score. The right hand continues the melody with quarter and eighth notes. The left hand provides a bass line with quarter and eighth notes. Dynamics include piano (p), piano-piano (pp), and piano accent (>). Measure 9 features a 9/8 time signature change.

Pno.

12

16

Pno.

16

pp

pp

16

Pno.

21

(almost tacit)

**

♩ = 66 (5 ♩. at 88mm)

Pno.

24

9/16

Pno.

quasi-niente

pp

31

9/16

Pno.

pp

dissolve into decay

ppp

mp

p

pp

p

31

9/16

Pno.

35

p *pp* *pp* *p* *pp*

3 5 3 5

Pno.

38

p *pp* *più pp* *calme* *pp*

9 16 9 16

3 3 3 3 3 3 3 3 4 4

optional tie

Pno.

41

più pp *ppp*

4 4 4

*quasi-trillo: nearly inaudible throughout; it need not be a constant near inaudible quality, it may be more and less inaudible, but always nearly, and still have some tone.

quasi-trillo*

Pno.

The musical score is for piano and consists of two systems. The first system has two staves. The upper staff contains a melodic line with a trill-like passage marked 'quasi-trillo*'. This passage is bracketed with a '4' and includes dynamic markings 'n', 'pp', and 'ppp'. The lower staff contains a bass line with a 'playful' marking and a slur. The second system also has two staves. The upper staff features a dense, rapid sixteenth-note passage marked 'ppp'. The lower staff contains a series of sixteenth notes. The key signature has two sharps (F# and C#), and the time signature is 9/16. The piece concludes with a double bar line.

45

♩ = 50 (ca. 5 ♩. at 66mm)

cantabile

p

p

Pno.

46

p

Pno.

47

Pno.

48

Pno.

12

52

Pno.

p

p

9/16

57

Pno.

pp

pp *mp*

$\text{♩} = 88$

9/16

64

Pno.

p

9/16

70

Pno.

mp

9/16

78

Pno.

più p

9/16

82

Pno.

pp

pp

p

9/16

89 *quasi-echo*

Pno.

92 *calm*

Pno.

97

Pno.

Pno.

99 15

6 3 9 16 3 6

Pno.

101

5 3 3 6 3 5

Pno.

102

5 5 5 5 n

16

(pile sound with pedal, allowing sound to ring through m. 110)

Pno.

104

106

108

110

Pno.

106

108

110

Pno.

108

110

(ca. ♩. at previous tempo)

111 $\text{♩} = 200$

Pno.

3

4 *pp*

4

4

4

9/16

9/16

116

Pno.

4 *più pp*

p

pp

3

3

9/16

9/16

121

Pno.

p

5

3

3

3

3

9/16

9/16

124

Pno.

Measures 124-128 of a piano score. The music is in 9/16 time. Measure 124 features a triplet of eighth notes in the right hand and a triplet of eighth notes in the left hand. Measure 125 has a half note in the right hand and a half note in the left hand. Measure 126 has a half note in the right hand and a half note in the left hand. Measure 127 has a triplet of eighth notes in the right hand and a triplet of eighth notes in the left hand. Measure 128 has a half note in the right hand and a half note in the left hand. The dynamic marking *mp* is present in measure 127. A fingering of 5 is shown in the left hand in measure 128.

♩. = 88

with deceptive calm and grow wild

Pno.

Measures 129-133 of a piano score. The music is in 9/16 time. Measure 129 has a half note in the right hand and a half note in the left hand. Measure 130 has a half note in the right hand and a half note in the left hand. Measure 131 has a half note in the right hand and a half note in the left hand. Measure 132 has a half note in the right hand and a half note in the left hand. Measure 133 has a half note in the right hand and a half note in the left hand. The dynamic marking *p* is present in measure 130. The instruction *poco a poco cresc.* is present in measure 130. A triplet of eighth notes is shown in the right hand in measure 129.

Pno.

Measures 134-138 of a piano score. The music is in 9/16 time. Measure 134 has a half note in the right hand and a half note in the left hand. Measure 135 has a half note in the right hand and a half note in the left hand. Measure 136 has a half note in the right hand and a half note in the left hand. Measure 137 has a half note in the right hand and a half note in the left hand. Measure 138 has a half note in the right hand and a half note in the left hand.

138

Pno.

5

140

Pno.

142

Pno.

allow sound to accumulate through end.

ff *l.v.* $\frac{9}{16}$

ff *l.v.* $\frac{9}{16}$

145

Pno.

p

Ped.

148

Pno.

p

segue pt. II